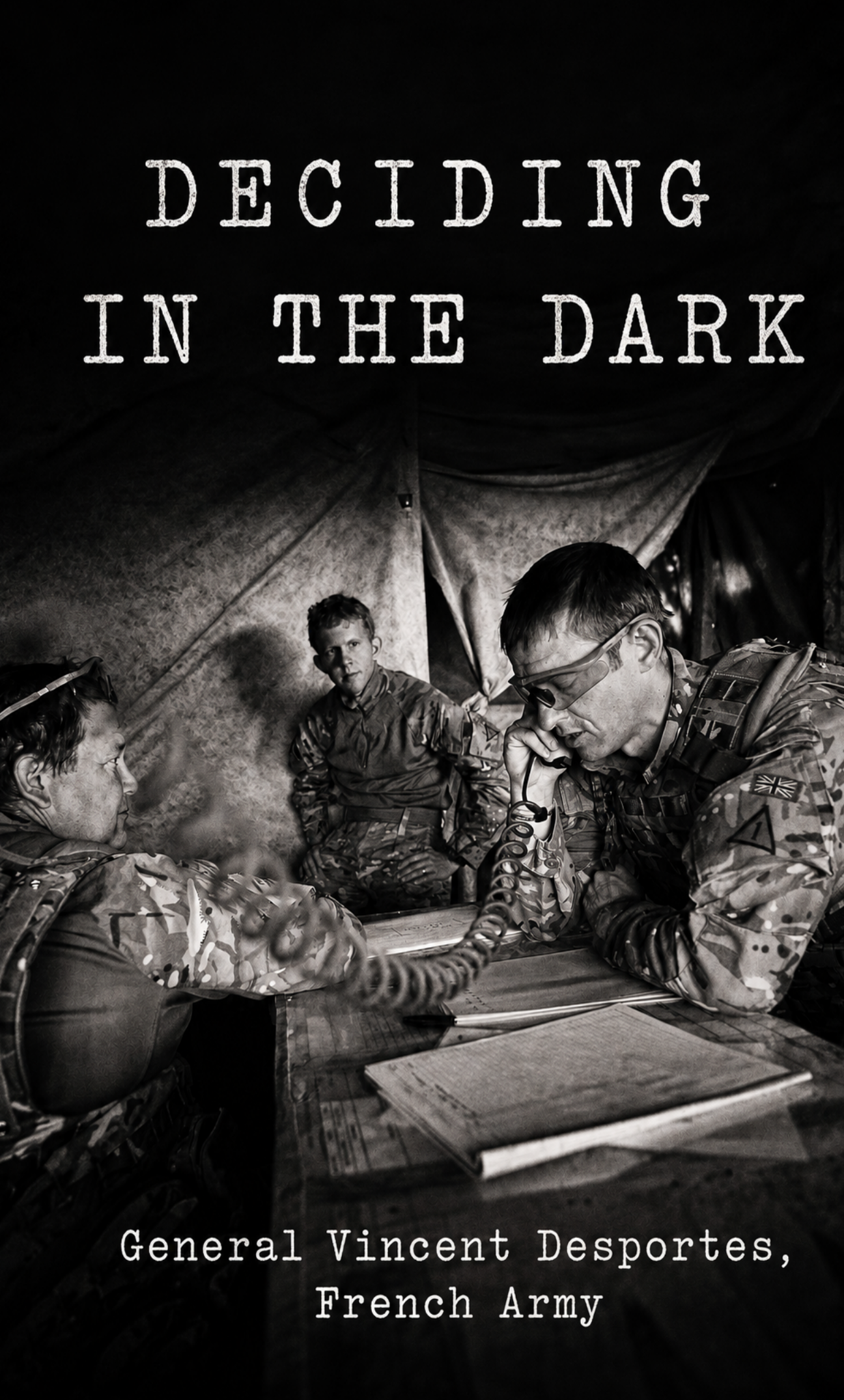
DECIDING IN THE DARK



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DECIDING IN THE DARK

Original title: *Décider dans l'incertitude*, Economica, 2007

Translation: Joanna MacDaniel

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First published 2008
Printed in France
Deciding in the Dark
ISBN 978-2-7178-5574-6

The "*Stratégies & Doctrines*" Series

General Vincent DESPORTES

DECIDING IN THE DARK

Preface by General **Bruno CUCHE**

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"Action is man surrounded
by circumstances"

Charles de Gaulle

Preface

"Gunfire kills. Outdated ideas too."
Marshal Foch

When General Vincent Desportes asked me to write the preface to this second edition of "Deciding in the Dark", I accepted with enthusiasm and without reservation, not only as an attentive and keen reader, but also as the Chief of the French Army Staff. In this capacity, I would encourage all decision-makers to draw inspiration from the ideas and precepts set out so clearly in this book. The author is at the forefront of a veritable revival of military reflection, being carried out by the military themselves.

"Deciding in the Dark" clearly places the key issues surrounding command in their true environment: the complex and uncertain environment of war. While the nature of war has not changed, since the end of the Cold War it has nevertheless taken on new forms. For the author, the end of the Cold War represents more than a strategic revolution – it is also an intellectual revolution. It marks the end of a model founded on certainties, stereotypes, deployment diagrams and the predominance of the classic instruments of power. Operational superiority now comes from dominance of the cognitive field. This book, which is studded with numerous reflections and quotations drawn from the most illustrious of French and foreign military leaders, also has the merit of returning man, in particular the commander, to the central role; a role denied to him during the time of the balance of terror and of the illusion of 'high-tech' superiority.

The commander presented to us by General Desportes is not a commander clinging to certainties, jealously guarding his prerogatives or acting with excessive caution. His commander analyses, reflects, anticipates and takes decisions. He has faith in his subordinates and encourages initiative. The response to an unpredictable and changeable enemy, constantly seeking ways of upsetting the balance, becoming invisible among the population and striking at our weak points, should

be neither systematic nor based on a rigid, centralised system. On the contrary. Only the initiative of the commanders at the lowest levels makes it possible to grasp often fleeting opportunities as they present themselves. It is interesting to note that some of the great leaders quoted in this book, such as Napoleon, Marshal Foch and Colonel De Gaulle, already favoured a "model of effectiveness", described by the author as "that of centralised planning and decentralised execution, centralised cohesion and decentralised initiative". The most important message that the author wishes to convey to all decision-makers is: "Do not be afraid of a confrontation of ideas"; it is the only way to comprehend complexity and to reduce uncertainty. At the same time, he notes that, although an essential pre-requisite, this does not suffice in itself. While reflection can reduce uncertainty, it cannot eliminate it completely. To take a decision is to take a risk; in other words, to demonstrate courage and reasoned boldness, the cardinal virtues extolled by Clausewitz.

By refusing to provide, inherently restrictive, solutions for the complexity, but rather by stressing the principles fundamental to reflection, and later to action, this book offers a universal approach, of great interest to all who are involved in "war", in whatever environment, and who are constantly confronted by the unexpected.

It is my wish that, with the help of this book, a true school of French military thinking will continue to progress, reviving the art of command and tactics, and inspiring both military commanders and civilian decision-makers.

General Bruno CUCHE

Former Chief of the French Army

I. Introduction

When completing the first edition of this essay, some three years ago, I had no idea of the extent to which events would confirm the need for a style of decision-making suited to the new reality: the increase in uncertainty. The evolution of crises and conflicts – such as those in Iraq, Afghanistan and Lebanon, to name just a few – has by and large confirmed a phenomenon long suspected: the very essence of warfare is to distance oneself from established models. In future, at all levels, from the strategic to the tactical, the decision-maker will face situations which are constantly new, always changing to reflect circumstances and ever fluctuating, requiring innovative solutions, permanent personal creativity and an increasingly rapid need to adapt decisions. In other words, we will need cultures, systems and personalities able to outmanoeuvre the unexpected at the earliest opportunity.

For the commander involved in action, this issue is by no means new. By its very nature, the need to make a decision presupposes uncertainty; otherwise it would be enough to allow oneself to be carried along serenely by the flow of the inevitable and the certain, with no decision required. However, for the commander, the conditions surrounding the decision are clearly characterised by unpredictability, as no action ever takes place in the circumstances envisaged. This is true firstly, because action is the product of the confrontation of human liberties, and secondly, because it is impossible to predict the successive reactions of actors intervening in a loop. It is further true, because such action always takes place in what Clausewitz called 'the fog of war': faced with the reality in the field, a commander must always make the decision in a context of 'friction', chance and disorder. In other words, he is deciding in the dark.

The greatest change is the increased number of levels at which decisions are made, coupled with the significant lowering of the decision-making threshold, while at the same time the effect of each individual decision, even minor ones, has increased considerably. The reality of today throws us into confusion; it transports us from the virtual war,

with its perfect vision of transparent battlefields displayed on computer screens, to the rugged demands of the terrain, and from carefully prepared decisions to the constant need for quick decisions in the midst of uncertainty. Our awareness is changing. The purpose of armed engagements is evolving and their conditions are being transformed: the clear image of a known enemy, physical targets, strategic visions, military objectives and open spaces is giving way to the uncertainties of the constantly-changing chameleon opponent, the human environment, combat in intangible battlefields, and action at a lower tactical level and in confined areas. It is now no longer a case of organising a successful common action, involving a restricted number of units acting against an identified opponent carrying out a clearly-defined operation, but rather of ensuring that the conjunction of the actions of a large number of small teams contributes to the overall success, despite operating in a highly decentralised manner, against a dispersed and little-known opponent, where the main thrust is at best fragmented and at worst non-existent.

This new opponent is less and less easy to detect, and consequently to locate. Nowadays, the situation, usually asymmetric, is characterised by an element of 'surprise', forcing the commander to decide and to react extremely rapidly. Reaching the right decision requires an understanding and a knowledge of the situation, together with the ability to identify micro-situations and micro-objectives. The "transparency of the battlefield" no longer seems to be the perfect solution. Yesterday, it was thought that it would be possible to decide and fight 'because of' information; today, it is becoming apparent that it will also be necessary to fight 'for' information before any decision can be made.

The 'contested zones' [1] in which army engagements now take place are characterised by considerable physical and human diversity. In addition, information superiority is reduced, communications systems reveal their limitations, and the rugged physical and human character of the areas makes both observation and interpretation difficult. It could be said that, from being objective and innately simple, intelligence has, to a great extent, changed to become subjective and profoundly complex. Previously, the emphasis was on gathering concrete information and the intelligence gleaned from it could easily be presented in tables, flow charts and graphs. Nowadays, the true objective of intelligence is to discover the opponent's intentions, which can no longer be easily deduced from the situation.

1. Brig. Gen. Robert E. Schmidle & Lt Col Frank G. Hoffman, *Commanding the Contested Zones, Proceeding,* September 2004.

Furthermore, tactical aspects are gaining importance over strategic aspects. Ultimately, it is the quality of low-level decisions – and of course their execution – which determines the success of operations. This will increasingly be the case in the future, when the opportunities offered by digitisation will inexorably lead to combat being 'spread over' small teams dispersed and located within the enemy disposition. The disappearance of a continuous front will mean the disappearance of a continuous overview. Influence will be more important than pure military effectiveness, with that influence being established primarily in the lower echelons; individual actions speak louder than strategic messages.

There is thus a growing need to generate favourable conditions for the many individual decisions which combine to achieve success. This requires both structural measures allowing the creation of adaptable tactical organisations and cultural measures to develop initiative and the culture of risk-taking. Two essential paths are proposed: ***belief in man*** **and** ***the flexibility of systems***.

Man has indeed a considerable capacity for autonomous decision-making, initiative and adaptation. Man thus offers the best means of adapting in the face of uncertainty, and it is essential to take advantage of this ability. The fundamental objective is to liberate the individual capacity for initiative, while at the same time fixing boundaries to ensure that the collective action retains a purpose and an aim. This is the concept of the '***freedom of action bubble***' or '***free space***' defined by the higher commander, within which the subordinate can operate freely. The more certain he is of his subordinates' reactions, the more quickly and calmly the decision-maker will be able to take the decision. To this end, all concerned must share the same deontological rules and the same principles with regard to the action. This is a question of culture and doctrine: both are indispensable in setting boundaries for the action and facilitating the ability to predict the opponent's action.

However, it is also critical that the decision should not place the decision-maker in a rigid, structural stranglehold, rendering adaptation impossible. The systems which form the basis for executing the decision must be simple and flexible, in order to make it easy to adapt to the environment. They must also have an inbuilt capacity for autonomous reaction, which explains the increased importance nowadays of the principle of a 'reserve'.

The above draws on principles previously recognised as essential to military effectiveness. Nevertheless, these principles are both increasingly indispensable and increasingly difficult for our young commanders – who are the ones actually responsible for the political success or

failure of the operation – to implement. This difficulty is essentially due to the conditions in which operations currently take place, which have a tendency to restrict initiative. Action and conduct are more and more bound by strict rules of engagement, whereas what is needed is to retain great adaptability in the face of an adversary whose attitudes and stratagems are constantly changing.

In summary, today, more than ever before, it is not the ability to plan and conceive which is key, but rather the ability to adapt; firstly because it is quite impossible to estimate accurately the occurrence of future types of engagement, or to predict with reasonable certainty the direction a tactical engagement will take, secondly because it will generally be necessary to fight a reactive war and, lastly because, in the course of such a reactive war, all command levels will constantly be called upon to respond, with very little time for preparation. In the future, it will be increasingly necessary to know how to adapt our equipment, methods, models, doctrine and decisions at very short notice.

This is a matter not only of culture, structures and procedures, but also of intellectual, structural and financial 'reserves'. It is also a question of flexibility within operational organisations and hierarchies, and here digitisation will be of great benefit. In the future, success will be not so much a question of technical capability, but rather of the ability to ensure the constant adaptation which must form the basis of the style of operational command and training for the troops. To achieve this vital level of adaptability, and to allow clear decisions to be taken calmly in the face of operational events, a strong faith in man, the consolidation of the common culture and the construction of flexible systems will be essential.

The problem can be summed up as that of freedom in relation to uncertainty. If one agrees with André Beaufre that, "the struggle for freedom of action is the essence of strategy", then the question of the management of uncertainty becomes central to strategy. The science of the action becomes firstly that of the decision in uncertainty. Indeed, if one believes Professor van Creveld, "no success is possible – or even conceivable – which is not grounded in an ability to tolerate uncertainty, cope with it and make use of it" [1].

It is my firm belief in the relevance of this last statement and my desire to guide the decision-maker along his difficult path, that have moved me to put my thoughts down on paper.

1. Martin van Creveld, *Technology and War: from 2000 BC to the present*, New York, Free Press, 1989, p. 316.

PART ONE

UNCERTAINTY IN MILITARY ACTION

Whether preparing for it or undertaking it, action is the prime purpose of armies. They engage in it on a daily basis, frequently having to adapt to circumstances which differ from those originally envisaged. The commander thus conducts his actions in a complex universe (that is to say, impossible for him to control fully), characterised by an imperfect view of the situation and the constant interaction of numerous parameters. This turbulence and instability render collective action in conflict extremely fluid. Operating in an ever-changing and ambiguous world, his actions involve "constantly-varying fluid realities which in themselves constitute, at any given moment, contrasting aspects, antagonistic forces and oppositions". [1]

By definition, armed forces are concerned more with the future than the present, since action is defined by its objectives. However, the future cannot be clearly predicted as, while it may be influenced, it cannot be determined. At the lower levels, the execution involves modifying a present subject to constant reconstruction. At higher levels, the preparation and the decisions relating to the action are based on what can only be an idea of the conditions surrounding the implementation and its consequences for the circumstances of future action.

Thus, "immersed in the flows and the facts, the events and the phenomena of evolution", to use the description given by Lucien Poirier, the decision-maker soon discovers that very few of the elements on which he must base his decision are truly certain. His knowledge of his own situation is somewhat vague while, despite the latest advances in intelligence gathering, the enemy's situation remains an assumption rather than fact.

1. Phélizon, *Trente-six stratagèmes,* p. 23. [Thirty-six stratagems]

It is constantly changing, and in particular, the fundamental psychological dimension seems to be impossible to grasp. Very rapidly, in the permanent interplay of actions and reactions born out of the principle of the duality of war, the decision-maker realises that he is unable to determine the ultimate repercussions of the options open to him, or to envisage a full spectrum of measures to be adopted. Thus, adaptation inevitably becomes a constant process, inherent to the nature of war, and key to survival and success.

Such uncertainty is, of course, not new, but neither is it about to be replaced by the clear, faultless vision dreamt of by the unrealistic advocates of knowledge technology. In the first official history of the "21-day" war in Iraq – from 20 March to 9 April 2003 – General Scales described the essential elements of Operation Iraqi Freedom, the last conventional – albeit totally dissymmetric – conflict to date. He concludes that, the "nature of war is immutable" and that, "the futurists who claim that new information and computing technologies will allow U.S. military forces to lift the fog of war" [1] were wrong. There is no doubt that more information was gathered and a greater number of targets were destroyed with greater accuracy. However, the requirement for information needed to operate modern systems has increased more rapidly than the capacity for acquisition and processing. Reporting on this first, classic, phase of the American engagement in Iraq, General Byrnes (US Army) described the environment as "volatile, uncertain, complex and ambiguous" [2] and considered that the stabilisation operations in which the US Army was subsequently engaged required a greater capacity for adaptation and flexibility. In other words, while the form of the uncertainty may have changed, its scope, and even less its nature, have not. It offers very little of the reality of what is to come, described over a century ago by Ferdinand Foch as "frequently improbable, born of elusive or inexplicable causes" [3].

In short, from Pharsalus – where Caesar confounded all expectations by defeating Pompey despite the latter's vast numerical superiority – to Baghdad, two thousand years later – which, in spite of the worst fears of most American strategists, crumbled in a matter of days, but three years further on remains the scene of violent and murderous confrontation – the nature of war has not changed. Inherent in this nature is the inescapable fact that the only certainty in action is uncertainty.

1. Williamson Murray and Robert Scales, The Iraq War, Harvard University Press, 2004, Cambridge & London, p. 239.
2. Symposium AUSA, Ft Lauderdale, FL, USA, 2 March 2004.
3. Ferdinand Foch, *De la conduite de la guerre,* p. 197. [On the Conduct of War]

Since the Age of Enlightenment, science has tried to explain natural phenomena, by bringing together predictable individual elements, thereby reducing these phenomena to a model, which, although complicated, can be simplified. This includes war, which has been at the centre of human behaviour since the dawn of time. However, historical analysis and understanding show, that in the phenomenon of war not everything is explicable, comprehensible and predictable. This is perhaps the essential lesson of Clausewitz, who tells us that "no other human activity is so continuously and universally bound up with chance as is war. And, through the element of chance, guesswork and luck come to play a great part in war." [1] He states further that: "War is the realm of uncertainty; three quarters of the factors on which action in war is based are wrapped in a fog of greater or lesser uncertainty." [2]

War is a complex system because of the potential unpredictability of human behaviour. It lacks the latent determinism which would allow a powerful intelligence to predict the evolution of the system by means of calculations. Robert McNamara, US Secretary for Defense under Kennedy and Johnson during the first five years of the Vietnam War, states in his memoirs: "War is so complex, it's beyond the ability of the human mind to comprehend."

In itself, the temptation to simplify the complex is potentially dangerous. After all, a simple notion has already been simplified, and this simplification removes that which is unpredictable or difficult to understand. While the unpredictable may be removed from the reasoning, it does not disappear from the reality of war, nor from the event itself. It will inevitably reappear during the action, thereby rendering unworkable any models based on such simplified notions. It should perhaps be accepted that war falls into the category of "complex adaptive systems", the term used by complexity theorists to describe the ability of living systems for autonomous adjustment. But, as Edgar Morin explains: "Complexity is not the complication: anything complicated can be reduced to a simple principle [...] thus the true problem is not to reduce the complication of developments back to simple rules; complexity is the basis." [3]

Uncertainty is thus inextricably bound up with military action; war must be fought and won in spite of it. Moltke, whose military genius had a profound effect on 19th century Europe, founded his success on this obvious notion. He believed that, "in war everything is uncertain, other

1. Carl von Clausewitz, On War, I: 1, p. 85.
2. Carl von Clausewitz, On War, III: 7, p. 193.
3. E. Morin *La méthode*, T. I, 1977, Éditions du Seuil, paris, p. 377. [The method]

than the will and the force of action inherent in the general himself." [1] In the preparation and conduct of his own action, he integrates the certainty of unpredictability, of "all these factors which are impossible to predict: the weather, illness, accidents, misunderstandings, illusions and all the phenomena which man calls luck, fate or the will of God, but which he has never been able to regulate." [2] Foch himself observes the limitations of pure reason when faced with the irreducibility of uncertainty, and refers to the "pretension that it is possible to resolve the unknown, which is inherent in warfare, through simple reasoning".

Thus military action implies the need to design and develop in a sphere of uncertainty: *uncertainty is inherent in war*.

II. War is unpredictable

Any military organisation involved in an engagement is a complex system, comprising multiple more or less independent elements, acting in accordance with their situation. Each action then affects the other elements. This system is part of a constantly changing situation in which, by definition, it interacts with another complex system – that of the enemy. As these two systems meet, they generate a new interactive system of even greater complexity. Thus no military event can be either perfectly random, or perfectly pre-determined. Nor can it be reduced to its elementary causes, given the degree to which these become enmeshed in an intricate and constantly evolving network. As a result of this, war, the random product of the dynamic interaction of events, becomes largely unpredictable. According to Clausewitz [3], "the very nature of the interplay and interaction leads to unpredictability".

Refusing to accept this, many have succumbed to the temptation offered by technology. Surely data could simply be entered into the computer until it comes up with solutions from which one can be selected? Would it not be enough to calculate the projectiles launched, the targets destroyed and the human casualties in order to influence the ratios and bring the conflict to a favourable conclusion? This mechanical and numerical approach failed in Verdun and Saigon, in Iraq and in Lebanon; its optimistic realism takes no account of the lessons of history. War has always been, and will always remain, an uncertain undertaking in which chance, all manner of uncertainties

1. Helmut von Moltke, On the Art of War, Selected Writings, p. 175.
2. Ibid., p.93.
3. Carl von Clausewitz, On War, II: 2, p.139.

and the unpredictability of human behaviour under the stress of the battlefield make it impossible for a commander to keep a tight control on events; its success, however achieved, is primarily a moral success. Victory or defeat is decided by the hearts and minds of political leaders, of the people or of the military and not by the destruction of a certain percentage of infrastructure and equipment.

Charles de Gaulle [1] called war, with its vagueness and imprecision, a complex venture, "offering the human spirit a sort of obscurity which intelligence is unable to penetrate", and continuing logically that, "action must be based on contingencies".

Unpredictability in the past

Clausewitz tells us: "In war more than anywhere else things do not turn out as we expect." [2] Military history confirms this assertion for every conflict, as well as the startling role of the "fortunes of war". The best reasoning or the most favourable balance of forces can crumble in the face of enemy rationality or the unexpected. Thucydides tells us how, as far back as the 5th century BC, Pericles, the Athenian strategist, based his reasoning on false hypotheses. He based his strategy on his own vision of Lacedaemonian rationale, believing that Sparta would quickly understand the futility of its efforts against the defensive position adopted by Athens, which had withdrawn inside the walls, while at the same time increasing its naval raids elsewhere. Wrong. For years, Sparta continued to lay waste to Athenian lands, slowly but surely ruining the wealth of the ancient city and forcing it into the strategic errors which led to its fall. Twenty-five centuries later, the failure of aerial bombing strategies (the Ruhr, Tokyo... Baghdad, Lebanon) or of embargoes demonstrates that the enemy does not always react in accordance with our standards or our wishes. On the contrary, fierce determination may replace the expected psychological collapse. Conversely, chance, expected to be unfavourable, may contribute to success, as illustrated by Operation Husky. At dawn on 10 July 1943, the most formidable landing operation of all time [3] was due to launch the

1. Charles de Gaulle, *Le Fil de l'épée* [The Edge of the Sword], p. 152.
2. Carl von Clausewitz, On War, II: 2, p. 193. Shortly after the end of the Gulf War, Alan Beyerchen observed in the journal International Security that, "conflict is intrinsically a nonlinear phenomenon where the conduct alters the characteristics in ways that cannot predicted analytically". Alan Beyerchen, Clausewitz, "Nonlinearity, and the Unpredictability of War", International Security, 17 (Winter 1992-1993), p. 61.
3. Seven divisions landed using amphibious craft, as opposed to five for Operation Overlord in Normandy.

campaign in Sicily, the first Allied step in Europe. Alas, as night fell on 9 July, a completely unexpected fierce storm threatened to disrupt the greatest armada ever assembled, to ruin the initial airborne operation and, finally, to compromise definitively this crucial operation. Eisenhower hesitated. Should the operation be postponed? He decided to carry on – the landing craft and the planes made their way as best they could. The landing was partially disrupted; 60% of the pilots lost their way and parachutists landed up to 80 km from their targets. Uncertainty proved its strength, to the detriment of the Axis-forces! The chaotic landings confused the defenders as to the Allies' true intentions, while the airborne troops seized any appropriate targets that they found. The coastal defences were considerably handicapped by the poor weather: "The Italians, having been on alert for many nights turned over gratefully in their beds, muttering 'at least they won't come tonight', but they did come." [1] Referring to his operations in Europe, Eisenhower later admitted, echoing Napoleon in fact, that "war is always conducted on the basis of unknowns and predictions, rather than on certainties." [2]

Unpredictability in the present

More recently, unpredictability and surprise (the effect produced) were among the key characteristics of the first phase of Operation Iraqi Freedom (March-April 2003). A significant factor in the preparation of the operations, they had a profound influence on their conduct. Information, the supreme tool of modern American military thinking, was supposed to do away with uncertainty. It did no such thing, though it clearly contributed to other remarkable operational effects. For instance, *the foundations on which the policies, the strategy and the operations were based turned out to be incorrect*. At a political level, starting in August 2002, the war had been based on the premise that, after some initial difficulties, the world would align itself behind the United States and also that Turkey would eventually agree to the northern element of the pincer movement being established on its territory. However, it did not happen like that. The same was true for the three initial strategic premises of the US administrations 'national marketing campaign': the Iraqi regime would fall immediately, with virtually no opposition; the coalition troops would be hailed as liberators and the

1. From the official report by Admiral Cunningham, C-in-C naval forces for Operation Husky, as quoted by Liddell Hart in History of the Second World War, p. 446.
2. Quoted by Vendryès, p. 300. (Pierre Vendryès [1908-1989], French doctor and philosopher, author of an important theory of the autonomy of the living organism and the free human arbiter.)

regular troops would surrender; chemical evidence justifying the war would be found rapidly. It is clear that on all three points the original certainties were swiftly replaced by surprise and setbacks.

The same was true of the four operational hypotheses, where the lack of accuracy was caused by incorrect strategic premises. The first was the certainty of the success of the initial 'shock and awe' precision bombing campaign. This concept did not have the expected results – any more than previous similar campaigns in Coventry, Dresden or Hamburg, in fact – even though the persistence of the later bombing raids eventually convinced the population of Baghdad that resistance was futile. If one recalls the publicity prior to the 'shock and awe' campaign, it can be seen that Fuller was correct when he said that the effect of concentration is greatly enhanced when linked to that of surprise! The second hypothesis was based on the 'Sedan syndrome'. US military academics are aware of the American fascination for the German art of warfare in the Second World War. They were thus not at all surprised to see the US Army attempt the same victorious manoeuvre. In reality, having been blocked at Karbala, the breakthrough could only be relaunched thanks to the firepower which literally crushed the three divisions – Medina, Hammurabi and Nida – deployed around Baghdad. The third hypothesis assumed that speed would do away with the need for protection of the flanks and the logistic lines, and thus with the resources needed to provide it. Here again, the situation improved only when numbers were increased and there was a return to the sound tradition of posts, flank-guards and the role of the cavalry, in this case the 101st Airborne Division. In the constant struggle between the principles of safety and of concentrating efforts, the latter had wrongly been allowed to dominate, with a negative effect on the economy of forces, in the belief that information superiority would be enough to guarantee freedom of action, without being burdened by the reserves which form the traditional response to uncertainty. Out went also, at an early stage, the fourth hypothesis, that of the lightning war, promised by both Secretary Rumsfeld and General Myers, Chief of the Joint Staff. Nevertheless, the speed of the Iraqi collapse eventually allowed the battle for Baghdad to be won in three weeks. In their forward command posts, the American commanders were forced to recall Moltke's principle, which had been drummed into them in their War Colleges: "no plan survives the first shot". For his part, the American president was probably contemplating, especially during the dark days of the second week of combat, the wise words of Churchill in his memoirs: "Never, never, never believe any war will be smooth and easy… The statesman who yields to war fever must realise that once the signal is given, he is no

longer the master of policy but the slave of unforeseeable and uncontrollable events."

There were initial surprises in Iraqi Freedom because the hypotheses proved to be false, but there were also *surprises during the conduct of operations*. Very soon the enemy began to react in unexpected ways. It will be a long time before we forget the words spoken by General Wallace, commander of the 5th (US) Corps, on 26 March 2004, when everything seemed to be going wrong: "The enemy we are fighting is not the one we expected." They did not expect to find the Fedayeen in the south because they were thought to be preparing to defend Baghdad. Unfortunately they were attacking the convoys and, to contain the threat, the Americans decided after all to return to and take the towns they had previously ignored. Karbala should have held and plans were already being made to fly in reinforcements from the United States to enable a consolidated attack when suddenly, the troops broke through as far as Baghdad Airport. The majority Shiite towns were supposed to fall at the very sight of an Allied uniform. However, Nassiriya and Basra put up resistance. The plan was to take the airport terminal by terminal, but again things changed and it was taken in one go. In Baghdad, which all experts had predicted would necessitate a difficult and murderous fight, two armoured raids showed up the weakness of the defence and opened the door to victory. There were also surprises at the technical and tactical levels. Firstly, the enemy's 'war tactics', although its contempt for the Geneva Conventions was already widely known. Secondly, the fallibility of the most advanced technology: Patriot missiles hit a British Tornado aircraft on 23 March and an F/A-18 on 2 April, and an F16 fired an anti-radar missile at a friendly site south of An Najaf on 25 March. Further surprises included the attack by an A10 on a convoy of British vehicles bearing clear identification markings, and Marines launching a mortar attack on a Marines command post. In another case, forward elements of the US Army and the Marine Corps fought each other above the Tigris in Baghdad, simply because their radios were incompatible. It was also a surprise to discover that, despite being equipped with GPS, logistic convoys could get their route wrong and fall into an ambush, or that an M1 tank could fire at a Baghdad hotel containing a large number of journalists. The real surprise, more than three years after the fall of Baghdad, is that power in itself is not powerful and that winning the war does not mean winning the peace.

There is no doubt that unpredictability remains a current phenomenon, which seems to surprise all who observe it. In a different context, Paul Valéry himself wrote: The unforeseen is undergoing a transformation and what is unforeseen nowadays is almost without limit. The

imagination is no match for it. Instead of playing, as we did in the past, an honest game of cards with fate, where we knew the conventions of the game and the number of cards and figures, we are now in the position of a player who is astonished to see unknown cards appearing in his partners hand and the rules of the game changing with every move. These [1]lines, which date from 1937, surely describe what is referred to today as the contemporary nature of conflict and considered to be the current conditions for the engagement of our forces.

III. The factors of uncertainty

A soldier always operates in a future over which he has very little control since, in the words of Marshal Foch, "in war it is impossible to predict everything." [2] There is no permanent, clearly-defined system to act as a framework. While experience suggests that the only certainty is uncertainty, there is no reason not to examine closely the causes of this uncertainty. The first of these, without any doubt, is the human factor. As Pierre Vendryès put it, the elementary fact of history is the autonomy both physical and mental of man. In war [3] it is difficult to predict the future, since war is based not on matter but on living organisms. As Clausewitz states, "the art of war deals with the living." The n[4]oted Prussian general also observes that: "War is not the action of a living force upon a lifeless mass, but always the collision of two living forces... It is a duel on a grand scale." [5]

The human factor

At the start of his *Études,* Colonel Ardant du Picq summarises the first cause of uncertainty in war: "Man is the prime instrument of combat." Ardant du Picq died leading his regiment in 1870; he was unknown in his lifetime, but was rediscovered by the French Army during the course of the intellectual awakening following the first disaster at Sedan. While his writings attempt primarily to demonstrate the essential role of moral forces in combat, he nevertheless describes in passing the prime factor of unpredictability. While the human

1. Paul Valéry, *Regards sur le monde actuel et autres essais*, Gallimard, Paris, 2002, p. 195-196. [A look at the modern world and other essays]
2. Ferdinand Foch, *De la conduite de la guerre,* p. 76. [On the Conduct of War]
3. Vendryès, p. 277.
4. Carl von Clausewitz, On War, I: 1, p. 86.
5. Carl von Clausewitz, On War, I: 1, p. 77.

factors – "with such variable effects" [1], as Foch puts it – or in other words, the moral factors, with their direct effect on how individuals feel about a political or operational plan, are at the heart of the success or failure of warfighting, it is the fact that they are so difficult to quantify, so highly random and so unpredictable which renders a purely scientific approach to war unrealistic. Clausewitz reminds us of this: "In a war one deals with moral forces and with effects that evade arithmetic calculation [2] [...] The combatants never cease to be individuals and together cannot constitute a machine [3]". While ultimately, the success of arms is based on the psychological, the random becomes the rule in historic events. This is doubly true: firstly, because men almost always act as autonomous systems, and secondly, because war is essentially an irrational human activity, which therefore cannot be explained by ideas based on rational human behaviour.

War is a confrontation of opposing wills in the pursuit of political objectives. The human dimension is therefore undeniably its major feature. No future technological developments, no matter how advanced, will be able to diminish this truth.

The individual

Liddell Hart, one of the greatest British theorists of the 20th century, also observes that the unpredictability of war lies in its human nature. In his view, luck "cannot be divorced from war since war is part of life." [4] Human nature is, indeed, strange, complex and mercurial. It cannot be reduced to a mathematical model since, while man is influenced by his surroundings, they do not define him. When plunged into the cauldron of war, which is violence in its quintessential form, man – with his strengths and weaknesses, his imperfections and faults, his fears and hesitations, his suffering, his hopes and emotions, his passions and his demons – proves to be the prime source of unpredictability. Man, his morale and his ability to resist in Stalingrad, then first to collapse in Baghdad and later to pick up the fight, are key factors in uncertainty. This uncertainty is then reinforced by the anguish it causes. It is hard for a soldier to cope with the insecurity brought on by the troubled wait for an event made more formidable by the fact that it is so difficult to comprehend. As Charles de Gaulle put it: "The enemy is

1. Ferdinand Foch, *De la conduite de la guerre,* p. 197. [On the Conduct of War]
2. Carl von Clausewitz, Theory of combat, p. 58.
3. Ibid., p.39.
4. Liddell Hart, Strategy, p. 337

indeterminate and variable; no study nor any reasoning, can reveal for certain what he is, what he will be, what he is doing or what he will do." [1]

There are decision-making tools available but, no matter how good they are, man himself remains the final player in the decision; the subjective nature of each decision thus remains incontrovertible. The plurality of choice and the flawed nature of the distinguishing factors render human action random. On this subject Pierre Vendryès writes: "The multiplicity of possible actions renders the events of history as unpredictable as those of the theory of probability." [2] Neither the behaviour of friendly troops, nor the decision of an opposing commander can be predicted exactly. This is all the more true if one accepts one of the fundamental teachings of Sun Tzu, which is that the first aim of a good operational plan is to influence the mind of the opponent. Thus nothing is certain, particularly since, in war – this dialectic of opposing wills – "each of the opponents is trying to lay down the law for the other", to use Clausewitz's excellent description. The universal law of gravitation renders the apparently incomprehensible movement of celestial bodies in relation to each other rational and predictable. There is nothing of that sort to regulate man, marked by his dual biological and mental autonomy. While relations between dependent systems are rational, between independent systems they remain random.

Freedom, a source of uncertainty

As Moltke remarked, the duel of wills is firstly a duel of freedoms. "The independent will of the enemy makes it impossible to predict how the war will unfold." Thus, in the final analysis, it is the opponent's freedom which constitutes the major source of uncertainty. This Prussian general, famed for his victories over the Austrians and the French, observed that: "with regard to strategy or operations, our own dispositions soon run into the dispositions made freely by the enemy." [3] He also noted that: "it was not possible to lay down with any degree of certainty an operational plan lasting beyond the first encounter with the majority of the enemy forces." This freedom prevents the principle of free will being applied fully, since it attempts to control a dynamic object rather than an inanimate object: the *mind of the opponent*, which is both impenetrable and unpredictable.

1. Charlęs de Gaulle, *Le Fil de l'épée*, p. 152 [The Edge of the Sword]
2. Vendryès, p. 270.
3. Quoted by Ferdinand Foch, *De la conduite de la guerre*, p. 25. [On the conduct of war]

In the face of constant development and adaptation by the enemy, the idea is now gradually gaining ground that it is no longer enough to "imagine the enemy"; one must "think like the enemy". The enemy is neither inert nor a simple planning goal. Endowed with a free, creative spirit, he has no intention of thinking like his own enemy and adapting to his ideas. One must get inside the 'skin' of the opponent. Having encountered difficulties in Iraq, the British and the Americans realised the need to create 'red cells' in their operational staffs, where they could develop the ability to "think like the enemy".

By its very nature, war is not a unilateral action, but the constant interaction between opposing ideas. In this sense, Marshal Foch referred to "the freedom of the enemy, an inescapable condition of war." [1] In other words, freedom is a source of the unpredictable.

War, duel of freedoms

The Clausewitzian notion of the duel illustrates this dynamic interaction between opposing parties. Foch compared warfighting to "the fight between two free wills and two free swords." [2] General Beaufre also took up this image. In his *Introduction à la stratégie* [An introduction to strategy], he defined strategic actions in terms of fencing moves. According to Beaufre, "the essence of strategy lies in the abstract interplay of the opposition of two wills". His definition of strategy encompasses particularly well the interactive, and thus inherently uncertain, aspect of military action. "Strategy is the art of the dialectic of two opposing wills using force to resolve their dispute." Finally, controlling the phenomenon of uncertainty means reducing the opponent's ability to restrict the effects of our own free will, in other words, reducing the opponent's freedom of action. General Beaufre also observes that: "The struggle of wills can be reduced to a struggle for freedom of action, with each side trying to preserve its own freedom of action and deprive the opponent of his [...] The struggle for freedom of action is thus the essence of strategy." [3] It is therefore a question of seeing action as a succession of acts, "each of which can be foiled by the enemy's reaction" [4], and of envisaging counter-reactions to the opponent's display of free will. This is what General Beaufre refers to as a "manoeuvre against unpredictability", intended to forestall this unpredictability

1. Ferdinand Foch, *Des de la guerre* [On the Principles of War], p. 260.
2. Ferdinand Foch, *Des principes de la guerre* [On the Principles of War], p. 396.
3. André Beaufre, *Introduction à la stratégie.* pp. 34 and 52. [An Introduction to Strategy]
4. André Beaufre, *La stratégie de l'action,* p.114. [The Strategy of Action]

resulting from the human dimension of war, in itself essentially a dialectic of opposing wills and freedoms.

Thus, any strategist basing his actions on the certainty of those of his opponent is likely to be cruelly disillusioned, as, in a complicated calculation of expectations and reactions, the two opponents are attempting simultaneously to impose their will on each other. Churchill advised not losing sight of the fact that, "however convinced one may be of one's own victory, there would be no war if the enemy did not believe that he also had a chance." [1]

Groups

Every man is a source of uncertainty since, in spite of the discipline instilled in him in peacetime, the obedience demanded in operations and the straitjacket placed on his freedom by the military machine, he remains fundamentally free. However, men are rarely alone during war. On the contrary, in addition to the thousands of possible differences inherent in any individual, it is always as part of a team, a group, a crew, a company or a regiment that they are thrown into the action. So uncertainty grows from the creation of these units which, far from being composed of the simple juxtaposition of individual wills, acquire their own personality, according to processes familiar to sociologists and psychologists. No matter how effective the training and instruction ahead of the engagement, their reactions in the true face of war will depend on the composition of each of these units and on the personality of their commanders. These are thus further factors of uncertainty to be added to those arising from the individual freedoms. The military action will ultimately be made up of collective behaviour patterns, themselves built up of myriad individual choices and actions, both independent and interdependent.

"The art of war deals with living forces and with moral forces. Consequently, it cannot attain certainty," [2] is how Clausewitz summarises this major source of uncertainty in war. *Thus there will be rationality in history*, since men, either singly or in groups, cannot be removed from their surroundings, nor from the systems of which they are a part, *but there will be more probability*, because the freedom and the autonomy of man cannot be denied, either totally or permanently.

1. Winston Churchill, My Early Life: A Roving Commission, p.246.
2. Carl von Clausewitz, On War, I, 1, p. 86.

The environment

While man is the prime factor of uncertainty, he is by no means the only one. The physical environment is one area that is not yet fully understood. However, in this case, scientific progress should make it possible to eliminate major areas of uncertainty one by one. It is becoming easier to grasp the characteristics of the physical environment and to integrate them into manoeuvre plans. The same does not apply to the meteorological factor, which despite an improved understanding, can still spring some serious surprises. The case of Operation Husky in 1943 has already been mentioned. Another example is General Patton's prayer during the Battle of the Ardennes (popularly known as the Battle of the Bulge) in 1944. Every soldier in his Third Army received a copy of a call to God, asking him to grant the American command a few hours of fine weather so that the fighter-bombers could take off and resolve the situation. More recently, there was of course no way of predicting the sandstorm which engulfed the American troops on their way to Baghdad at the end of March 2003. It considerably upset their plans and forced them to slacken the pressure being put on the Iraqi forces they had already disrupted. US General Buford C. Blount, commanding the 3rd (US) DI, reported[1] that, in the middle of this sandstorm, he had virtually no intelligence about the enemy. However, having no choice other than to continue his attack, albeit more slowly, he took measures to improve his ability to react, in order to cope with the increasing level of uncertainty.

The politico-diplomatic environment, which cannot be predicted by technical means, is a factor of great uncertainty. It is fluctuating and arbitrary, a product of the freedom of men and their governments. An abrupt change of mind by an ally or an enemy, or the belated rallying of a neutral country can, at a stroke, have a profound effect on circumstances. In 1917, for example, the arrival into the war of the United States changed the course of the war, rendering obsolete the strategic aspirations of the German High Command. In 1950, the sudden involvement of Chinese forces in the conflict in Korea completely altered the balance of forces and, in just two months, pushed back the US/UN forces from the Manchurian border to south of Seoul. More recently, in March 2003, Turkey's refusal to allow the United States to establish a northern front in the war against Iraq from Turkish territory forced the American command to revise its plans completely and to launch the ground operation without the 4th Mechanised Infantry Division. Turkey's firm stance clearly surprised the Americans, whose

1. AUSA Symposium, Fort Lauderdale, FL, USA, 3 March 2004.

imperial conviction had not envisaged the case of a nation simply saying "No", despite pressure being applied in many ways.

Such a reversal of fortune might have been less of a surprise to US Army General George Marshall – the true commander of the US forces during Second World War, and the key architect of their success, but better known for the plan that bears his name, introduced when he was Secretary of State – as he was convinced that military action should take full account of the unexpected and be able to improvise. In particular, he wrote that: "The art of war has no traffic with rules, for the infinitely varied circumstances and conditions of combat never produce exactly the same situation twice. Mission, terrain, weather, dispositions, armament, morale, supply, and comparative strength are variables whose mutations always combine to form a new tactical pattern. Thus, in battle, each situation is unique and must be solved on its own merits." [1] No surprises with this concept. Charles de Gaulle had already clearly stated that: "Those who fight perpetually face a new situation, in part at least unforeseen [...]" and thus "action is only valid in terms of contingencies which will never be encountered again." [2]

Any action in war is thus the temporary result of a particular combination of circumstances, leading to original problems and unique solutions.

IV. Conceptualising uncertainty: the Clausewitzian model

Clausewitz was probably the first practitioner to have really examined the principle of uncertainty. By conceptualising everything that is not purely rational – and recognising that rationality is incapable of governing warfighting – he remains an essential source of reference in this field. His thoughts on the *unpredictable nature* of war, on "the factors that distinguish real war from war on paper" [3] still divide modern military thinking, depending on whether they are accepted or ignored.

For Clausewitz, *uncertainty* is the hallmark of military action, which he views as being constantly surrounded by a *fog* [4], the thickness of

1. Quoted by Gorman, p. I-29.
2. Charles de Gaulle, *Le Fil de l'épée*, p. 119 [The Edge of the Sword]
3. Carl von Clausewitz, On War, I, 7, p. 119.
4. In contrast to the term 'friction', the actual term 'fog' is not used very much by Clausewitz, but it is a good representation of the concept he develops. Moltke seems to have been the first to use the term widely; it is found particularly in his instructions to the commanders of large units.

which may vary. The multiplicity of variables and the chaotic confusion of their effects create the unpredictable, while the imponderable – the *friction* – combines with the uncertainty to turn war into a phenomenon which cannot be controlled by the effects of the mind and human will alone – a venture akin to "movement in a resistant element."[1] As the action progresses, chance, the inescapable factor, imposes its force on the operation. A good commander will know how to harness chance, to *guard against vagaries* and *to exploit opportunities* by taking *considered risks*.

The 'fog' of war

Clausewitz observed that: "Many intelligence reports in war are contradictory; even more are false, and most are uncertain… the facts are seldom fully known and the underlying motives even less so."[2] In his view, this uncertainty is intrinsic to the very nature of war. One must try to control it, but it remains an *inescapable fact.* Since this fog will never clear completely, the commander must integrate it into his reasoning and his decisions, then take the steps needed to act and to win in spite of it. The *moral factors* play an important role here through their constant influence on the event – the violence which is liberated inflames the passions and alters the rationale of the players. A thousand imponderable facts have a direct influence on the course of events, making human thinking quite unpredictable. Clausewitz accepts the need for intelligence, but believes at the same time that no amount of effort will succeed in clearing the fog completely; it is an integral part of war. He thus insists on the importance of the complementary, more *internal*, approach that consists of reflection, based on intuition, appreciation and the subjective extrapolation of the known facts. Any doctrine which attempts simply to reduce war to a balance between forces and equipment would be doomed to failure. Any purely technical approach will fail.

'Friction', the truth of war

In his attempt to conceptualise something not part of determinist thinking, Clausewitz arrives at the notion of *friction*. In his view, this is an autonomous force, bringing together innumerable independent factors, which "makes so difficult that which seems simple" and transforms an activity, which can seemingly be reduced to the logical interaction of

1. Carl von Clausewitz, On War, I, 7, p. 120.
2. Carl von Clausewitz, On War, I, 6, pp. 117, 156

known elements, into a hazardous enterprise. This concept encompasses the unpredictable and random factors, both mental and material, whether they arise from within the organisation or are imposed by the outside environment. Here we find the drives and urges which disrupt the rational functioning of the human mind, such as fear and its consequences. Through its influence, both psychological and material, such *friction* represents a major constraint on the freedom of action and the application of the principle of free will which nevertheless remains essential to overcome it, through strength of character and spirit.

> "Everything in war is very simple, but the simplest thing is difficult. The difficulties accumulate and end by producing a kind of friction that is inconceivable unless one has experienced war... Countless minor incidents – the kind you can never really foresee – combine to lower the general level of performance, so that one always falls short of the intended goal. Friction is the only concept that more or less corresponds to the factors that distinguish real war from war on paper. The military machine is basically very simple and therefore seems easy to manage. But we should bear in mind that none of its components is of one piece: each part is composed of individuals, every one of whom retains his potential of friction...
>
> This tremendous friction is everywhere in contact with chance, and brings about effects that cannot be measured, just because they are largely due to chance... Action in war is like movement in a resistant element." [1]

One of the key characteristics of this phenomenon is its *irreducibility*. Wisdom and operational effectiveness thus demand that it be always taken into account. According to Clausewitz: "The good general must know friction in order to overcome it whenever possible, and in order not to expect a standard of achievement in his operations which this very friction makes impossible." [2] Furthermore, "An understanding of friction is a large part of that much-admired sense of warfare which a good general is supposed to possess."

No matter how much control technology can offer, it will never be able to eliminate either this friction or the fog, as even the most modern conflicts remind us on a regular basis. During the Gulf War, the latest technology was deployed, but as General Calvin Waller, General Schwarzkopf's second-in-command, put it in April 1995, when commenting on the conduct of operations at a congress organised by the

1. Carl von Clausewitz, On War, I, 7, pp. 119, 120.
2. Carl von Clausewitz, On War, I, 7, p. 120.

Massachusetts Institute of Technology (MIT): "When you are in the driver's seat, you are confronted by the fog and frictions of war, which are not conducive to the same perfect decisions you took on Monday morning over coffee in headquarters." Of the more recent campaign, Iraqi Freedom, General Scales, concluding his analysis, observed again that in Iraq "friction was part of life – and death – as it has been in military conflicts since the beginning of recorded times." [1]

It is striking to compare the contemporary remarks of two American generals with those made by the French General Colin a century earlier:

> "War is the domain of friction and of uncertainty. While at first it may not seem as though reading such aphorisms makes one better able to command troops, if one goes into it in more depth one becomes immune to the ideas of those who construct the systems. The formal rules are put aside in favour of initiative, accepting only the simple principles and dispositions which can subsist among the friction, uncertainty and danger… The army that defeated us in 1870 was the work of the Prince, King and Emperor Wilhelm. For over half a century he endeavoured to form it and to instil in it a fervour for initiative and action. This was the main reason it won. Add to that a host of generals imbued with a simple and solid doctrine and you will see what Clausewitz did for his country."

Chance and disorder, the inescapable factors of war

Because it is impossible to predict all the many possible combinations of the different variables, *chance* plays an important role. Moreover, the enemy is a significant source of chance. Arising from a need that can be neither predicted nor controlled, *disorder* also seems to be a natural product of from the action of war. Thus chance, disorder and, consequently, the impossibility of accurate prediction are also, according to Clausewitz, typify the true nature of war. He considers that: "No other human activity is so continuously or universally bound up with chance; and through the element of chance, guesswork and luck come to play a great part in war." [2] For the commander, the only solution is therefore to learn how to operate in an environment of chaos, uncertainty, unceasing change, chance, disorder and friction.

The effects of chance are **amplified** by the effect of non-proportionality. Frequently, minor events and specific individual actions have

1. Williamson Murray and Robert Scales, The Iraq War, Harvard University Press, 2004, Cambridge & London, p.238.
2. Carl von Clausewitz, On War, I, 1, p. 85.

unforeseen consequences. In war, this is the equivalent of the butterfly in the chaos theory. It complicates the life of the commander who, even if fully informed, cannot predict the effects of arbitrary events. On this subject, Napoleon observed that: "Military science consists of first calculating all the opportunities and then working out exactly, almost mathematically, the role of chance." [1] This inevitability of chance in war made La Rochefoucauld modest. He observed that: "Although men are proud of their great actions, they are often not the results of a grand design, but of chance." [2]

The commanders of Operation Desert Storm (February 1991) rediscovered this perennial truth from the very start of the air campaign. The two bombs intended to destroy the fortified bunker housing the secret police in Baghdad killed more than two hundred of the civilians who had sought refuge there. The very next day the emotion caused by the television coverage brought an abrupt halt to the attacks on the centre of the capital. This removed one of the comparative advantages offered to the coalition through its technological capabilities, which was the possibility of a direct hit on the political infrastructure of Saddam Hussein's regime, the enemy's centre of gravity, the fall of which would have speeded up operations.

Ultimately, the role of the commander in time of war can be defined in terms of chance [3]; since it cannot be completely eliminated, victory will go to the commander best able to limit its hold and to ensure effectiveness in spite of it. Napoleon is clear: "Chance remains a mystery for mediocre minds, but becomes a reality for greater men." [4]

1. Napoleon, Conversation with Mme de Rémusat.
2. Quoted by Vendryès, p. 268.
3. However, the inescapable reality of chance must not be allowed to be an excuse for inadequate reflection. In this sense, the enquiry report into the responsibilities of General Nivelle at the major and extremely bloody offensive on the Chemin des Dames in April 1917 is somewhat puzzling: "General Nivelle was responsible for the plan, the mode of attack and for the conduct of operations. He entirely accepted this responsibility. He had faith in his methods and upheld them in spite of everything, thus demonstrating an incontestable strength of character. The role of chance in war is so significant, that it appears impossible to state that General Nivelle's plan was not feasible. However, one must recognise the fact that the commander-in-chief had chosen an extremely difficult terrain, and that in a major attack over a front of 80 km he was dealing with an enemy that was aware, superbly well entrenched and had access to considerable reserves." General Nivelle was relieved of his functions on 15 May 1917. ("Enquiry report into the responsibilities of General Nivelle, 1917", quoted in *Le Chemin des Dames*, Somogy, Paris, 2003, p. 94.)
4. Napoleon, Conversation with Mme de Rémusat.

V. From fog to the "limited rationality" of the commander

Since "the unknown is the factor that governs war" [1], those in charge must take account of this when making their preparations. Thucydides already recorded the importance of considering the role of uncertainty and disorder before embarking on a war:

> "Consider the vast influence of accident in war, before you are engaged in it. As it continues, it generally becomes an affair of chance, chance from which none of us is exempt, and whose event we must risk in the dark." [2]

The British commander Field Marshal Wavell – who had outstanding success in North Africa in 1940 and 1941, before being appointed Viceroy of India in 1943 – made a similar comment on the need to take account of the dual phenomenon of chance and disorder in the planning of operations:

> "War is disorder; it can only be that. There are so many fortuitous and unpredictable events in this uncertain profession – an unforeseen change in the weather, a message which gets lost, a commander killed at a critical moment – that even the best plan rarely runs smoothly. The lesson is that *one must be aware of this* and *prepare* oneself as well as possible to cope with the uncertainties of war." [3]

Since the *fog* will never fully clear, intelligence will never provide all the information needed, the "facts of the problem are only seldom certain and never definitive" [4], and it is impossible to take account of all the elements relevant to the decision, the commander must base his decision on his personal assessment of the residual uncertainty, but his decision will ultimately be guided by *intuition*. He must determine what is possible and then, more shrewdly, probable, bearing in mind that it is likely to be the improbable that has the greater consequences.

In Clausewitz's view: "The general unreliability of all information presents a special problem in war: all action takes place, so to speak, in a kind of twilight. Whatever is hidden from full view in this feeble light has to be guessed by talent, or simply left to chance. So once again for lack of objective knowledge one has to trust to talent or to luck." [5]

1. Ferdinand Foch, *Des principes de la guerre,* p. 86. [The Principles of War]
2. Thucydides, The History of the Peleponnesian Wars, Book 1, Chapter 3, Section 78.
3. Wavell, Speaking Generally, p. 59.
4. Ferdinand Foch, *Des principes de la guerre,* p. 99. [The Principles of War]
5. Carl von Clausewitz, On War, II, 2,4 p. 140.

Echoing this, Charles de Gaulle considered that even when using its inherent processes (deduction, induction, assumption…), intelligence can embrace the different variables, study them and place them in order. It can prepare the conception, but it cannot accomplish the delivery without assistance. In his eyes, it is by following his *instinctive response to the situation* that, "man perceives the reality of the conditions surrounding him and senses the corresponding impulse." [1] Moreover, he went on: "Great military leaders have always been aware of the role and the value of instinct", in terms of both intuition and instantaneous mobilisation of knowledge.

Accordingly, military decisions are subject to 'limits' imposed on rationality, in the sense in which this is used by Raymond Boudon. [2] Frequently unaware of the full picture, the decision-maker finds himself in an operational situation that must serve as a basis for axioms and hypotheses, which he is seldom able to check. After examining their interaction, he is finally able to make a decision. The decision-maker acts deliberately, using his rationality to establish his modes of action and strategies. However, while the strategies may be rational, three unavoidable constraints mean that their *rationality will always be limited*: the information, which is never complete, the impossibility of envisaging all solutions and the inability to analyse these solutions to cover all possible consequences.

The decision-maker is therefore unable to determine the ideal solution in absolute terms. If a single *best way* exists, it cannot be determined by a thorough examination of the wide range of solutions offered by the multiplicity of variables. Thus the decision-maker opts for the least 'unsatisfactory' solution. To paraphrase Raymond Boudon's definition of homo sociologicus, one could define the dux militaris as "a deliberate player, equipped with a range of preferences, searching for acceptable ways to achieve his objectives, more or less aware of the degree of control he has over the elements of the position in which he finds himself, acting on the basis of limited information and in a situation of uncertainty… The dux militaris can be characterised by a *limited rationality.*" [3]

Since the uncertainty of any assumption, combined with the constant role of chance, means that the player is continually confronted by realities

1. Charles de Gaulle, *Le Fil de l'épée*, p. 154. [The Edge of the Sword]
2. A 20th century French philosopher, one of the founders of the contemporary French sociological school, whose works are based in part on those of Herbert A. Simon, the American sociologist.
3. Raymond Boudon, *Effets pervers et ordre social,* PUF, Paris, 1989, p. 14. [Perverse effects and social order] [Precis of the Art of War]

which differ from those expected, the commander has no choice other than to prepare to act in the framework of "limited rationality". Any discussion of uncertainty is sterile – to deny it would be foolish. On the contrary, accepting this inescapable aspect of any action implies ensuring the means to act with it and because of it. The good thing about uncertainty and chance is that they are *shared equally*. Since they create as many problems as opportunities, *success will smile on the commander who is able to benefit from his opponent's disorder*, while at the same time managing to remain master of his own as much as possible.

Disorder attenuates the principle of free will. There would be no point attempting to control events strictly in pursuit of "rationality". No matter how difficult it is for those of a rational disposition, it is wiser to try simply to influence the general course of the action. The explosion in the number of potential conflict areas today multiplies the number of variables and their possible combinations. So, rather than being able to limit the chaos, an essential quality for a commander is to *be able to act in and despite the chaos or, even better, to be able to turn it to his advantage*. This is in line with Chinese strategic thinking [1] which, when faced with the difficulty of shaping circumstances to achieve a particular effect, prefers to adopt a patient, waiting approach, with its potential strength prepared for action, and then to seize the occasion when chance offers a favourable opportunity. Seen from this angle, the only requirements are those imposed by the situation. The execution is more important than the planning that is so dear to the rational Western mind. It is counterproductive to set strict rules and to impose requirements on oneself. The resulting lack of flexibility prevents the strength that has been accumulated and reserved from having its potential full effect once the long-awaited opportunity arises. Thus, the strategist should not base his ideas on decisions taken prior to the development of circumstances. His art consists of variation, allowing him to base his effectiveness on being able to adapt to reality.

Finally, the action of war should be largely empirical even though, according to Charles de Gaulle, "the French spirit is very loath to recognise this." [2] The winning doctrine is that which takes account of circumstances, enabling the commander, despite his "limited rationality", to make decisions and to act in a chaotic environment.

1. The interesting *Traité de l'efficacité* [Treatise on efficacy] by Francois Jullien offers an accessible summary of Chinese strategic thinking.
2. Charles de Gaulle, *Le Fil de l'épée,* p. 195. [The Edge of the Sword]

VI. History as a means of understanding uncertainty

Misusing history

To understand the concept of uncertainty, *a study of military history offers the vital complement to experience*. Many illustrious commanders have learned more from history than from studying the latest technologies and procedures. Russell F. Weigley, the great historian of the American armed forces, observed that: "The most prestigious military academies have always given military history a central place in their syllabus." [1] According to Foch, one should "have studied military classics, and examined and resolved concrete cases", because "to maintain the brain of an army in peacetime, there is no book more rich in military thinking than a history book" [2]. Later, in 1918, reflecting what he had been teaching at the War College before the First World War, and on the war which was reaching its end, Foch, newly appointed Marshal of France, recalled the key role of the study of history in training commanders to deal with uncertainty:

> "It is by developing through study their power of analysis and of summary, or in other words of conclusion, in a purely objective sense, by examining real-life cases taken directly from history, that students will be given the capacity to take a timely and wise decision, and that they will acquire, through the conviction of their knowledge, the confidence to take this decision on the field of action." [3]

Foch recognised that history demonstrated the superiority of the Prussian command over the French command in 1870: "The positivistic teaching of our academies concentrated only on the subject matter. The great awakening from this stupor came in 1870, when we were given as opponents minds formed by the teaching of history and the study of concrete cases. It was in this way that, since the beginning of the century, Scharnhorst, Willisen and Clausewitz had trained the command of the Prussian army." [4] Since war became the subject of such

1. Russell F. Weigley, New Dimensions in Military History, p. 1.
2. Ferdinand Foch, *De la conduite de la guerre,* preface to the 1st edition, 1904. [On the Conduct of War]
3. Ferdinand Foch, *De la conduite de la guerre,* preface to the 4th edition, 1 September 1918. [On the Conduct of War]
4. Ferdinand Foch, *Des principes de la guerre,* pp. 90, 92. [The Principles of War]

consideration, and despite the gulf between the theory and practice of teaching, military history has generally been regarded as one of the best ways of preparing for wartime decision-making, other than experiencing it for oneself. The study of command can be based on the analysis of the known facts of the past and the causal links which have forged victories and defeats, on the discovery of the relationships which must exist between elements of the action, and on a given perception of disorder and chance that cannot be recreated by exercises or simulation. It is not that the past repeats itself exactly – to view history as a collection of recipes would be dangerous – but rather that a close examination reveals the perpetual aspects of war. (In particular those aspects which can only be seen by looking back: the persistent nature, *friction,* of *uncertainty*, the domination, the *human dimension,* and "man, always the same, with his passions and instinct, unchanging throughout the centuries." [1])

History can be misleading

The study of history is indispensable, but must be approached with caution. The great danger posed by history is that of reorganising life, making the arbitrary appear rational and, consequently, softening the importance of uncertainty and chance, thereby giving an inaccurate vision of the environment of future actions.

Basing his ideas on the typical example of the ceremonies marking the 60th anniversary of the Normandy landings, Edwy Plenel, editor-in-chief of *Le Monde*, urged the belated spectator of history to proceed with caution. [2]

> "Offering scenes from the past, the commemorations lead us to believe that what happened was inevitable. That there was only one possibility. That the past we are looking at could only have led to the future that indeed came to pass. In other words, that history is written in advance, automatically and logically, with no place for chance or the unforeseen. Anachronistic, in that it sees the past only in terms of the present, this method of writing history is also a way of writing a story. [...] This victory seems to be borne out by evidence, radiant with truth and bursting with reason. But those who were part of it were not living in certain times. For them it was all risk and uncertainty: they believed in victory, but they would never

1. Ardant du Picq, *Études sur le combat,* p. 36. [Studies of War]
2. *Le Monde 2*, editions of 6 and 7 June 2004.

have claimed it in advance, nor would they have called it inevitable." [1]

The great risk with history is that it gives the impression that it was possible to predict the future, whereas decision in action has always been a *combination of the rational and the arbitrary*. When viewed as a whole, history seems organised. However, in terms of the science of action, this view is wrong: history was not lived generally, but rather individually and, at that level, clearly bears the stamp of the arbitrary. Thus we should study history, but we should take care to avoid being misled by the overall image of events offered; an image which has inevitably been reorganised, with the conditions of uncertainty removed, as the human mind is unable to reconstruct the exact conditions of past action. Moltke observed that: "Only a man who is a stranger to any notion of military art can recognise in the evolution of a past campaign the execution of a plan made in advance in all its details and faithfully followed to the end." [2]

History blurs the true nature of war

To be accessible, history must simplify the complicated. Naturally, it has a tendency to select, but above all to 'reorganise' events, giving them a logic they did not have. It rationalises decisions which were

1. In this connection, as time endows Operation Overlord with an increasingly thick aura of romanticism, it will be important to remember that, as soon as the "OK, let's go!" on 4 June, at 04.15, launched the operation, General Eisenhower, the commander-in-chief, prepared a press communiqué to be released in the event of a complete and thus very bloody failure. In it he accepted full responsibility and asked to be relieved of his post. This indicates the uncertainty into which he had been plunged, even though he was the one who knew best his strength of character and the key role of instinct in this decision, to which the concept of limited rationality can be fully applied. The memorandum written by Eisenhower on 3 June, a few hours before his decision, sheds much light on this. He wrote, "*In this country the weather is virtually unpredictable... no-one other than I, who bear the specific responsibilities of the final decision, can understand the weight of this burden... the Supreme Commander receives the wisest possible advice from his subordinates and, more than any among them, is aware of the different interests that are at stake... What I believe now is that the need to launch the operation on the next favourable tide is so strong and the uncertainty surrounding the meteorological conditions so great, that it will always be impossible to anticipate the perfect meteorological conditions coinciding with suitable sea conditions, and thus I think we should go for it, unless the weather deteriorates significantly.*" History tells us that during the later window of opportunity, on 19 June and the days following, the coast of Normandy was hit by exceptionally bad storms...

2. Quoted by Ferdinand Foch, *De la conduite de la guerre,* p.25. [On the Conduct of War]

sometimes pure intuition. Because of the need to understand or for educational reasons, or simply because the historical materials available such as archives, reports, communiqués etc., contain more of what was, rather than what might have been, the historian rewriting the action of war at a later stage tends to obscure the phenomenon of uncertainty. The vagaries seem more like opportunities than unforeseen events. Chance frequently appears only in a favourable light. On rereading the events, the commanders' reactions appear natural. They seem to have chosen the only possible solutions when, on the contrary, they always had to choose between numerous possibilities. The choice which, with hindsight, seems obvious, was a gamble when all the options were open. The uncertainty of the commander plagued by incomplete information and nagging doubts is lost. In some ways, history resembles the large cemeteries which, in the peace that replaces the earlier disorder, transform the chaos of war into long rows of white crosses in perfect lines on reassuring lawns. In rereading history, the disorder and the unknown, the doubts of the commander who goes on to victory and his ability to manage uncertainty must not be forgotten. Vendryès clearly illustrates this negative effect of the otherwise clearly useful attempt to explain through history.

> "The generalisation of history raises the debate and renders the event comprehensible. However, a simple change of viewpoint is enough to alter completely the life of men. Seen from the point of view of the individual, events seem to be caught up in an agonising maelstrom. But this turbulence disappears in the grand accounts of history. As their numbers increase and more statistics become available, arbitrary events tend to lose their arbitrary nature. Looking down on history, one can see ordered perspectives. Ephemeral and local fluctuations become imperceptible when dealing with centuries and continents. The degree to which history appears to be governed by rationality or probability changes according to whether it is looked at as a grand overview or in detail. There is the same order of difference between the individual and humanity as between the molecule and the gas. The higher up the order one goes, the more the statistical constants obscure the deviations of individual actions. In the same way, when viewed from a distance, history moves from the arbitrary nature of individual lives to the constants of statistics, then to the rigours of rationality and finally to the constraints of fatalism." [1]

1. Vendryès, pp. 329,330.

It therefore becomes necessary to immerse oneself in history. However, to avoid the trap of false interpretation, one must be cautious and *search for the reality behind the history*, as the most dangerous *negative effect of the latter is to reduce the fog and uncertainty*, thereby giving the impression, in retrospect, that war can be totally controlled by the human mind, which can only lead to major disappointment in the future. The prime quality of a commander in action is – using his reason, culture and instinct – to know how to take advantage of the moment and transform it into a success. General Patton confirmed this: "Victorious generals make plans which they adapt to circumstances; they do not attempt to create circumstances which suit their plans."

The artificial creation of closed systems

Although it is quite right to train commanders on the basis of concrete historical cases, there is a further risk that should be borne in mind. As soon as an event is completed, it becomes a closed, fixed system for which all the data and dimensions are known. This is therefore far removed from reality and from unfolding events. These are open systems for which the number and nature of the variables have not been determined in advance, and which cannot as a whole readily be grasped intellectually by the decision-maker. The risk is that the decision-maker will become accustomed to reasoning on the basis of problems for which all the information is available and for which the best solution exists, which is never the case in the reality of developing history, where each decision causes the system to evolve.

Along the same lines, it is clear that military training in peacetime is, without exception, based on closed systems, in other words, systems that distort the reality of war. At the lowest level there is the individual rifleman and his target. He learns how to perform a technical action in a particularly simple closed system, which bears no relation to the reality of combat and the multitude of psychological or material variables, even though modern methods attempt to make training as realistic as possible. At a higher level, exercises for major units also reproduce closed systems, for the most part cut off from the reality of war because, once again, it is impossible to represent the multitude of variables and their interaction. In passing, it is worth noting the converse effect of simulation which, by definition, simulates primarily the quantitative and the material whereas uncertainty, which, as we know, is central and inescapable in war, derives essentially from the qualitative and the psychological. The point here is not to recall the obvious nature of the artificial and simplistic character of peacetime training, where it

is impossible to reproduce realistically the conditions of friction and uncertainty. It is to demonstrate that brains are being asked to consider closed and quantitative systems where, in contrast to the open systems of the real world, it is possible to control the limited number of variables and thus to find the *one best way*. This parody of chaos may therefore lead one to believe that it can be controlled by methods which are ineffective in the turmoil of real circumstances. However, it is not possible to achieve precise and full control of events. By channelling the flow of circumstances, the decision-maker may try to instil some order into the disorder, but without attempting to obtain full control of those circumstances.

This explains yet more clearly the key role of history in training commanders, as observed by Moltke. For him – and for us – staff exercises, no matter how essential they may be for the technical training of officers, cannot by themselves teach the reality of war. It is crucial that they be complemented by the study of military history, in which the reader, having been made aware of the circumstances, will be able to discover the dimension of uncertainty.

PART TWO

DECIDING AND ACTING IN UNCERTAINTY

As we know, the commander is plunged irremediably into uncertainty. Faced with this, as well as with the interaction of the fog and the friction, and of chance and disorder, two opposing attitudes are possible: either *deny* their inescapable character or *accept it and adapt to it*. The latter is the attitude most often seen in great commanders; they intuitively take on board the ideas of Edgar Morin who observed that "while ignorance of uncertainty leads to error, the certainty of uncertainty leads to strategy". [1] Thus, military thinkers and actors alike have tried to develop tools allowing them to act despite uncertainty and to adapt the general principles, which tend to ignore the arbitrary in the pursuit of rationalisation, to suit the circumstances. For Foch, that Grand Master of the principles of war, the first effect of the arbitrary nature of the event "is to change the way in which principles present themselves. On occasion it changes them so much that they become distorted and the participants no longer recognise them." At that point, despite his plans and doctrinal references, the wartime commander is often confronted with situations which were not foreseen when considering the question in advance. Ignoring them and trying instead to relate the unexpected circumstances to predetermined plans will run the risk of failure or, at the very least, of serious setback.

German military history offers us classic examples of opposing attitudes in the face of uncertainty. Von Schlieffen [2], who claimed to be able to *control friction,* was opposed not only by his predecessor, the great Moltke, who saw the conceptual integration of friction as the basis

1. Edgar Morin, *La méthode* [The method], Y. III: *La connaissance* [The knowledge], Part 1.
2. Alfred, Count von Schlieffen (1833-1913)

of the German school, but also by all the other victorious commanders who won despite this phenomenon, without, however, overcoming it.

Von Schlieffen, chief of the great German General Staff and father of the famous plan which bears his name, chose to ignore unpredictability. He was convinced that it was possible to control the friction, even if this necessitated engaging the largest army in the history of Prussia. The solution? Detailed and rigid planning ("passing over the event") and centralised command. His intention was to direct millions of men in enormous areas in the same way as Frederick the Great, his master, had led his 30,000 men in the restricted area of Leuthen. Following what Von Bernhardi called "a concept of mechanical warfare" [1], Von Schlieffen constructed a machine intended to operate automatically, taking no account of friction. The meticulously planned schedule envisaged the inevitable annihilation of the French army in six weeks. No general reserve was planned since, once it had started, the war would undoubtedly proceed perfectly thanks to the excellence of the plan. Such conviction of being able to dominate the very nature of war implies not a little conceit! In fact, a great deal of conceit, in ignoring in advance "the disobedience of Von Kluck", the fatigue of the German infantry as it lay before Meaux, the solidity of Joffre, who "set his powerful personality against the event" [2], the ferocious tenacity of Foch in the marshes at Saint Gond ("Hard pressed on my right. My left is yielding. Situation excellent. I am attacking." [3]) and the fierce determination of the courageous French. The Schlieffen plan, designed as an "a priori manoeuvre", collapsed as a result of his refusal to acknowledge *friction*.

By ignoring friction, Von Schlieffen was in fact challenging Prussian tradition as, at the dawn of the 20th century, the historian General Von Caemmerer viewed the concept of *friction* as one of the most influential teachings of Clausewitz on the Prussian, and later the German, Army since it introduced the cult of the initiative. One of Von Schlieffen's predecessors as Chief of the German General Staff, General von Grolmann, stated that: "In the arrangements for a future war, only the first general order should be fixed;... preparing a long-term operational plan while sitting at a desk is the sort of nonsense found in a military novel." [4] Here Grolmann is reiterating the general attitude of Moltke who, in contrast, based all his action on the existence of the "fog of uncertainty: in war everything is uncertain as soon as operations

1. Friedrich von Bernhardi, On War of Today, vol. 2, p. 163.
2. Charles de Gaulle, *La France et son Armée*, p.483. [France and its Army]
3. Jean Autin, Foch, p.129.
4. Quoted by Jehuda L. Wallach, The Dogma of the Battle of Annihilation, p. 54.

commence, other than the will and energy inherent in the general himself." [1] Moltke knew that: "No calculation of time and space can guarantee victory in the realm of chance, error and disappointment; every step towards the goal is accompanied by uncertainty and the risk of failure". [2] His intention was to manage this concept of friction through the combination of two principles: firstly, a great degree of *freedom of judgment and action accorded to his senior subordinates*, and secondly, *a shared military culture and doctrine of employment*. The latter should facilitate the convergence of individual opinions and initiatives to form a coherent whole, working towards a common objective. In his opinion: "It should be the rule that orders should only contain what the subordinate commander cannot determine for himself." [3] Moltke was criticised for wanting to manage uncertainty, particularly by Von Schlieffen. However, it allowed him to emerge as the brilliant victor – tactically, operationally and strategically – in all three of his campaigns. [4] Moltke's attitude, more so than that of Von Schlieffen, reflected German military culture, at least until the end of the Second World War. Comparing the styles of war fighting, Bruno Colson remarks that, during this last conflict, when confronted by an American attitude which "had a tendency to envisage all possible solutions and to prescribe in detail the modes of conduct, and to be preoccupied by the control of units, the Wehrmacht accepted friction as an integral part of war and resolved the problem by training its commanders at the lowest level to establish, but also, if necessary, to modify a plan to achieve the operational objective. It was necessary to learn to face the unexpected and to seize opportunities, even if this involved disobeying orders." [5]

In fact, since unpredictability is part of war, the only solution is to accept it at all levels of decision-making. It is up to the commander to manage it, in other words, to take measures which make it possible not

1. Helmut von Moltke, On the Art of War, Selected Writings, pp. 173, 229.
2. Helmut von Moltke, On the Art of War, Selected Writings, p. 175.
3. Helmut von Moltke, On the Art of War, Selected Writings, p. 231.
4. With this approach Moltke was in fact applying the rules of his example, Napoleon. The Emperor gave very detailed orders as long as he was confident that he would not be confronted by uncertainty. The preparation of his campaigns was meticulous, but the detail in the orders stopped at the border. The subsequent orders to his Marshals were particularly stark: where they should go, when and what they should do there. The greater the uncertainty, the more confidence Napoleon placed in his Marshals' ability to analyse and to act. Conversely, where he had reduced the level of uncertainty on the battlefield, he adopted a more directive command style in order to construct in his own mind the coherence of his subordinates' actions.
5. Bruno Colson, *La culture stratégique américaine,* p. 220. [The American Strategic Culture]

only to withstand any blows, but also to take advantage of them, as "while the unexpected does not guarantee success, it does offer the best chances".[1] The ability to cope with risk and to seize the opportunities born of unpredictability is clearly one of the fundamental qualities of a commander. For Foch, the art of war is to be able to retain the capacity to act despite the unexpected. On a number of occasions he quotes Xenophon: "The art of war is the art of keeping one's freedom of action."[2]

This implies taking account of unpredictability during planning and action and consequently the combination of three major families of procedures developed by commanders for the conduct of operations:

- the *reduction of the "fog" of war*, to restrict the role of the unexpected;
- the *"management" of uncertainty*, according to the principle of counter-arbitrary action, by the development of methods to optimise the capability for action despite the general context of the unpredictable;
- the *exploitation of uncertainty*, through the developing modes of action which take advantage of friction and chance.

VII. Reducing Uncertainty

The first reflex of any commander is to try to reduce the degree of uncertainty. However, a wise commander will expect neither to be able to make the "fog" disappear completely, nor to conquer the "friction". On the contrary, he will accept their existence and try to master them as best as possible, without seeking the precision and control that friction renders impossible.

The search for intelligence

The history of command during operations reflects the eternal quest for certainty. The first step is the search for the intelligence which is so vital to the correct implementation of the principle of the economy of forces, through the definition of the effort required, as well as of the 'where' and 'when' it should be applied. In recent times we have seen the development of technologies increasingly capable of penetrating – at least in places – the fog of war.

1. Liddell Hart, Strategy, p.337.
2. Ferdinand Foch, *Des principes de la guerre*, p. 202. [The Principles of War]

This approach is as old as war itself; the profession of intelligence agent is said to be the oldest profession in the world... The search for intelligence may be carried out according to Western practices aimed at establishing and updating the "strategic or tactical diagnostics" [1], or, in the Eastern manner, may adopt a "waiting" position, in the more patient form of "strategic or tactical listening", in an attempt to detect the favourable factors and take advantage of the "potential of the situation" [2]. It is a case of using information and observation to develop a sensitivity to the slightest eventuality and to follow the 'trend' from the moment it emerges in order to exploit it to the best effect: "A good strategist holds back and waits for the moment".

Sun Tzu already considered information as an indispensable means of reducing uncertainty and believed that the search for information was one of the prime responsibilities of a commander. In his view, strategy is based on a constant flow of information. Sun Tzu was particularly interested in all things related to the opponent's intent and his state of mind. Knowing the heart and mind of the enemy makes it possible to anticipate his reactions and to set a trap in the direction which his nature would automatically send him. To defeat the enemy one must understand him; in other words, know him as well as one knows oneself. Sun Tzu wrote: "Secret operations are essential in war;... An army without secret agents is exactly like a man without eyes or ears. Of all those in the army close to the commander, none is more intimate than the secret agent." [3] Without saying so directly, Sun Tzu nevertheless recognised implicitly that intelligence was by no means a panacea. With his much repeated statement that "all war is based on deception" [4], he has surely become the most quoted advocate of the surprise and deception manoeuvres he believed to be the foundation of any victorious operation.

Jomini also considered the search for intelligence to be one of the fundamental conditions for success. However, he believed that by the time it reached the commander, intelligence was unreliable and in most cases obsolete. He suggested therefore that the imperfections of the information be corrected by reflection and intuition. While he stated that: "One of the surest ways of combining clever manoeuvres in war would be to order movements only after obtaining perfect information of the enemy's proceedings", he nevertheless recognised that imperfect

1. In the words of General Beaufre.
2. Jullien, p. 29.
3. Sun Tzu, The Art of War, pp. 147, 149.
4. Sun Tzu, The Art of War, p. 66; the term 'deception' is the modern military equivalent of the old notion of 'trickery'.

intelligence was "one of the chief causes of the great difference between the theory and the practice of war[1] [and that] unless in possession of certain and exact intelligence, a skilled general should never set out without two or three clear ideas about the probable hypotheses."[2]

Ferdinand Foch set great store by the importance of intelligence and condemned "the pretension of wanting to resolve through reasoning alone the unknown that is an inherent aspect of war."[3] In his view, the constant evolution of variables – the inescapable uncertainty that weighs so heavily on the decision-maker – did not allow action to be founded solely on reasoning and hypothesis. Foch also rejected what he called "the constant appeal to reason" and "the conduct of war which exists on preconceived ideas and bases its decisions purely on hypothesis". On the contrary, the extreme volatility and unpredictability of situations leads him to praise the constant intelligence effort and to proclaim himself a fervent defender of "the school of reality sought and recognised, which contrasts with that of hypothesis". Thus, as a convinced follower of Clausewitz, he accepts the reality of the uncertainties and the frictions of war, while at the same time affirming the importance of intelligence. When describing his general staff he clearly emphasises the role of the search for intelligence and the study of the enemy: "What made my staff superior during the war was that everyone examined the questions in depth, knew what was at stake and took decisions based on facts. The situation must be studied and the possibilities considered; it is then possible to quantify, to assess and to decide…" In a similar way Charles de Gaulle also linked information and prediction, stating that: "Information, if gathered intelligently and used ingeniously, should contain the problem, whereas hypothesis opens up paths."[4]

An approach which is inevitably not perfect

Intelligence has always been considered both indispensable and imperfect: it needs to be supplemented by other means and other processes.

There is no perfect technological compensation for the inescapable fog of war. One might be forgiven for thinking that, with every day, technology succeeds in clearing the fog a little more. Surely modern techniques are improving intelligence assets and the commander now

1. Jomini, *Précis de l'art de la guerre* II, p.178. [Precis of the Art of War]
2. Jomini, *Précis de l'art de la guerre* II, p.178, 189. [Precis of the Art of War]
3. Ferdinand Foch, *De la conduite de la guerre,* p.336. [On the Conduct of War]
4. Charles de Gaulle, *Le Fil de l'épée,* p. 152. [The Edge of the Sword]

has round-the-clock information? Perhaps, but fog – in this case the meteorological variety – greatly reduces the capacities of space and airborne observation systems, for example. The same technology that enhances intelligence assets is also used to improve active and passive camouflage and deception manoeuvres. Fundamentally nothing has changed; the art of intelligence has simply been adapted to cover the expanding field of action and has in no way eliminated the human dimension of war. While the tactical commander can make an accurate estimate of the quantity of forces facing him, what does he truly know about the will of those men, the state of their morale or the degree of resistance? Who can know with certainty the reactions of the local population or the level of their support? High-performance intelligence systems may well be able to reveal some of the material secrets of the enemy commander, but none can penetrate his mind. Ingenious solutions are gradually eradicating quantitative uncertainty, but qualitative uncertainty is here for the duration. No matter how advanced the technology, it will never reveal all the secrets of the battlefield. As Charles de Gaulle said: "Believing that one has a means of avoiding the surprises of circumstances only creates the illusion of being able to disregard the mystery of the unknown." [1]

So Alexander watching the crushing defeat of the troops of King Darius III of Persia at Arbela; Pompey dominating the battlefield at Pharsalus, yet unable to defeat Caesar; Louis XV and his son, the Dauphin, at Fontenoy; Napoleon on the hill at Zurlan and later at Stare Vinohrady directing his marshals towards Telnitz, Sokolnitz and Pratzen; or even Wilhelm I on the heights at Sedan enjoying the encirclement of the French troops, were all probably better informed about the battlefields on which the destiny of their people was at stake, than a modern-day commander, despite the extraordinary intelligence assets now available. His uncertainty is at least the same as that of the great Emperor, who had to make do with a few spies, field glasses and liaison agents. The American historian Martin Van Creveld notes that: "Despite the considerable amount of high technology available to them, today's armed forces do not seem to be any better at dealing with intelligence than a century or a millennium ago. Although modern means doubtless allow information to be gathered and analysed more rapidly than ever before, irrespective of the distance, enemy movements or meteorological conditions, the ability to achieve certainty has not improved one iota. [...] Thus, to believe that, as a result of some prodigious technological breakthrough in computers or remote sensors, the

1. Ibid. p. 195.

wars of the future will be less opaque, and therefore have a greater level of rationality is, quite clearly, illusory." [1] The thick "fog of war" seems, once again, to have engulfed the battlefield. The US Army, directly confronted by the new reality of conflict in Iraq, is fully aware of the risk of knowing more and more about one's allies, but proportionally less and less about one's enemy. At the now predominant tactical level, it recognises the impossibility of merging electronically the clear and accurate 'blue' images with the vague and outdated 'red' images.

Thus, although high-performance systems are now an indispensable means of providing the commander with information, as are intelligence gathering efforts, they do little to counteract the rapid growth of the battlefield and nothing to change the nature of war. This remains the realm of uncertainty, in which the principles needed to manage it are unaltered. History presents us with an uninterrupted race between the growth in the size of the zones of action, with the corresponding increase in the need for information, and the capacity of systems to respond. Over a century ago, Foch noted that: "The mastery of industry was changing the forms of war and continuing the development of the art, without affecting in any way the fundamental principles of the conduct of war." [2]

Negative side-effects

Furthermore, technology and the multiplication of information sources have inherent negative side-effects. An initial analysis might lead one to think that the more information is available, the greater the knowledge will be. This is most definitely not the case. The old adage is regularly proved still to be valid: too much information kills the information.

In reality, the more information, and the longer it takes to process it, the greater the risk of being unable to distinguish the relevant from the irrelevant, the important from the unimportant or, simply, the true from the false. Certainty is far more a question of understanding than of facts. The multiplication of these facts requires a processing capacity suited to the need for analysis in the time available. The problem nowadays is far less a lack of intelligence and more an information overload, which is in danger of swamping the ability of the decision-makers to

1. Martin van Creveld, *Technology and War: from 2000 BC to the present*, New York, Free Press, 1989, p. 266.

2. Ferdinand Foch, *De la conduite de la guerre,* preface to the second edition, 1909. [On the Conduct of War]

process and absorb the information. There exists a dialectic between time and information. In war, knowledge has a limited validity. The time taken to assemble the information needed to consolidate this knowledge tends to render it out-of-date, while at the same time the ever-increasing pace of operations reduces the time available to gather and process intelligence. The acceleration of the operational tempo increases the need for speed in making use of the intelligence, while the growing size of the areas of operation multiplies the need for information. The quest for intelligence resembles an unwinnable race against time.

The attacks on the World Trade Center on 11 September 2001 are a typical example of this difficulty of making the best use of the wealth of information available. According to the official investigations conducted by the US administration to determine whether there had been a failure in the intelligence system, and – more importantly – whether it would have been possible to identify the ideas behind the attacks in time to prevent them, it appears that the competent services did indeed hold all the pieces of the puzzle, but that they were lost in the mass of available clues or, at the very least, that they were not analysed and correlated correctly. One of the parliamentary reports concluded that there was insufficient capacity for analysis; it considered that technology provided the necessary information, without being able to process it. "While technology remains one of this nation's greatest advantages, ithas not been fully and most effectively applied in support of U.S. counterterrorismefforts."[1] Technology itself is also blamed: it did not manage to foresee the attack and the "lack of reliable and knowledgeable human sources significantly limited the secret services' ability to acquire intelligence that could be acted upon before the September 11 attacks."[2] On balance, the report seems to indicate that it was less a matter of insufficient information, and more of the inability to deal with it. In *Le Monde*, the Director of France's domestic intelligence agency, DST, stated that, in his opinion: "It is no secret to say that even [the US intelligence agencies] have problems with sorting information."[3]

Moreover, far from always making the situation easier to understand, the partial clearing of the fog may produce the optical effect of making the remaining layers even more dense. As the mass of available

1. Report of the joint inquiry into the terrorist attacks of 11 September, December 2002. Quoted in *Le Monde*, 26 July 2003.
2. Report of the joint inquiry into the terrorist attacks of 11 September, December 2002. Quoted in *Le Monde*, 26 July 2003.
3. Pierre de Bousquet de Florian, Director of the DST, quoted in *Le Monde*, 26 July 2003.

information grows, so the demand for information increases. As information arrives, new questions arise and new shadowy areas are created. The more accurate the information becomes, the more gaps seem to appear. The nearer it gets to the time when the decision must be taken, and the more new unknowns become apparent, the more likely it is that certainty will collapse. This residual intellectual uncertainty may therefore lead the decision-maker to delay his decision in order to call on new intelligence sources and await the final information, and thus penetrate the new "foggy" areas revealed by the intelligence already obtained. The uncontrolled quest for intelligence creates the risk of deciding too late, since the ideal window of opportunity for a decision is usually quite narrow; once enough information has been assembled the time for action has often passed, as Clausewitz had already realised. "Waiting to be fully informed before deciding is equivalent to choosing the manoeuvre retro-actively which grants the enemy complete freedom of action." *The risk of wanting perfect intelligence is that the event itself takes the decision.*

Even though it is indispensable to the conduct of combat, intelligence does not represent the complete answer to uncertainty: "The general lack of reliability of all information presents a particular problem in war: all actions take place in a sort of twilight; [...] anything that cannot be seen perfectly because of the low light level has to be deduced thanks to the commander's talent, or simply left up to chance." [1] The fundamental point here is that one must seek to discover what the enemy intends to do, rather than try to find out exactly what he has already done. A decision made by a man of action, seeking to make a definitive choice between the possible future scenarios, will never be perfectly rational. Even General Marshall, the essential and methodical craftsman of the Allied victory in the Second World War, remained deeply convinced that most military decisions had to be taken quickly, on the basis of patchy information. [2]

Thus, however great the intelligence effort to reduce the degree of uncertainty, it will never be completely eliminated. Decisions will always be based on incomplete, inaccurate and even contradictory information. *Waiting for certainty before acting inevitably means losing the initiative and missing out on favourable opportunities.* Military decisions can never be simply the result of mathematical calculations. They will always require intuition and the ability to take in the essence of a situation, in other words the insight enabling a multitude of circumstances to

1. Carl von Clausewitz, On War II; 2, p.140.
2. Gorman, p. I-27.

be grasped effectively. The words of Foch remain true: "The unknown is the law of war."[1] The ability to take rapid decisions on the basis of incomplete information will remain an essential quality for a commander.

The circulation of information

The elements of information received are only of use if they are correctly organised and analysed, in order to be transformed, step by step, into knowledge that can be used in decision-making. However, this knowledge itself will only be fully effective if it is shared promptly among all the actors who need to have it. In this sense, lifting the fog of war depends just as much on information being correctly distributed as it does on it being correctly gathered.

Information which does not reach the organisations that could benefit from it is of no value. Turning again to the example of the attacks of 11 September, if the various American intelligence services had been able to pool all the information they held, they would probably have reached significant conclusions before the attacks took place. The joint report mentioned earlier concluded that one of the major shortcomings of the secret services was the lack of dialogue and exchange. The FBI, the CIA and the NSA do seem to have been in possession of all the information needed to predict the attacks.

Efficient dissemination of intelligence is thus essential to its operational value. Nevertheless, here again lurks the danger of information overload affecting the executive level, if the higher levels have not played their part. A lack of method or discernment means information may be disseminated too widely and too systematically, down to the lowest levels, without the necessary re-processing. The question remains the same: who needs to know what and at what level? The principle of the controlled sharing of information is clear: only information which is of direct use should be sent to a recipient, who should not be swamped by a flood of information liable to emphasise his uncertainty rather than reduce it. An actor who is weighed down by pointless details will see his capacity for processing saturated and, not knowing what he should retain and use, will remain in a state of uncertainty. To this end, the modern principle of real-time information sharing should be strictly monitored, if the negative side-effects are not to outweigh the expected gain in effectiveness.

1. Foch, *Des principes de la guerre* p. 253. [On the Principles of War]

The utopia of the perfect vision

The utopian supporters of all-powerful technology nevertheless believe that one day – when all the difficulties involved in gathering, processing and disseminating intelligence have been overcome – technology will be able to dispel the "fog of war". Then the commander, armed with a perfect vision of his own capabilities and those of the opponent, will take decisions based on rational considerations and will finally triumph over the phenomenon that is friction. This tendency – which, according to General Scales, "rests on a profound ahistoricism that misses the lessons of the past, much less even a reasonable examination of recent past" [1] – is of course developing in the United States, where the belief in the ability of technology to gradually resolve all complex issues in the world is a national creed. This optimism is very obvious in the Pentagon, where all the senior officials – pushed by the defence industry, which has much to gain – extol the virtues of this approach, imposing it little by little on other allied armies fascinated by the promise of perfect knowledge. Williamson Murray, historian and keen observer of the American military apparatus, believes that: "Some are even suggesting that these technological advances will eliminate friction by giving commanders full and perfect knowledge of the enemy's intentions. What seems to be happening, especially in the Air Force, is a renewal of the sort of mechanical, scientific and analytical approach which played such a role in the Vietnam debacle." [2]

This current trend among those in charge at the Pentagon is of great concern to some of the clearer analysts or better readers of the lessons of history. Franklin Spinney, a senior Pentagon official, expressed his concerns openly and publicly in May 2001. They were to be dramatically confirmed during the long American campaign in Iraq following the fall of Baghdad (2003), as well as during the defeat of the Israeli Defence Forces (Tsahal) – a very Americanised army – following the intervention in Lebanon in July-August 2006. Spinney linked the phenomenon he condemns to a much older American tradition:

> "In this concept, commanders can always see clearly, fear does not affect rationality, mental perfection is the rule, the fog of war is an anachronism and weapons are fired at a safe distance and hit with unerring accuracy. In fact, this substitution of technical fantasies for difficult decisions is not a revolution. The revolution in military affairs (RMA) is a rehash of what the techno-gurus sold to Defense Secretary

1. Williamson Murray and Robert Scales, The Iraq War, Harvard University Press, 2004, Cambridge & London, p. 240.
2. Williamson Murray, Does Military Culture Matter? Orbis, winter 1999, pp. 37-38.

Robert McNamara in the 1960s. It was a computerized see-decide-strike system that failed to halt North Vietnamese infiltration down the Ho Chi Minh Trail. The RMA is based on the same old world view in which the enemy is an unthinking system of targets, and strategy boils down to assigning weapons to those targets. Like the French techno-theorists who designed the Maginot Line, the New Age swamis see war as a predictable engineering problem to be solved by a mechanical marvel, not the unpredictable evolutionary stew of imagination, chance and necessity. Of course, nowadays we have better sensors, faster computers and more accurate weapons. Just like their predecessors in the Vietnam War, the gurus swear that their technologies will change the nature of war; however, the failure resulting from this techno-revolution elixir divorced from reality becomes clear when we observe our inability to hit tactical targets in Kosovo." [1]

General Clark, for his part, concluded in his war memoirs that – whether by cause or effect – the fading of the Clausewitzian concept of uncertainty has become more pronounced in the air and land training areas set up by the US Army in its western deserts, "where the air is pure and the topographical features are clear". "This has given us the precision strike and high-altitude unmanned vehicles, and it has given some the clever idea that it is within our grasp to know everything about any given 200 kilometres square, and that by so doing, we can dominate the outcome of a battle with minimal risk and central control, with a couple of smart people making the key calls." [2] In spite of this utopian vision, reality is not fading, no matter how good the latest technological developments. In his history of the first phase of the Iraqi Freedom campaign, General Scales also pointed out that: "Those in command of Coalition forces had to make decisions of life and death under split-second pressure and unprecedented barrage of information that was often ambiguous, uncertain, contradictory, or quite often wrong… Commanders of today can see and sense the battle field with extraordinary clarity. But in an information-rich environment, what one needs to know is often buried in a blanket of white noise, and individuals at every level reach limits in what they can absorb and pass along." [3]

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1. Franklin Spinney, Baltimore Sun, 11 May 2001. At that time Franklin Spinney was a senior Pentagon official.
2. Wesley Clark, Waging Modern war, p. 433.
3. Williamson Murray and Robert Scales, The Iraq War, Harvard University Press, 2004, Cambridge & London, p. 238.

In the face of uncertainty, the first route for the commander is to use intelligence to try and increase his knowledge of the environment – friend and foe – to allow him to penetrate the fog of war. However, the strategist cannot hope that it will disappear entirely to reveal a clear decision: to base one's actions on a certain knowledge of what the enemy will do is to risk severe disillusion. Thus the commander cannot rely solely on the search for intelligence – the limits are all too clearly demonstrated by history. He must afford himself the means to operate in spite of uncertainty, by adopting the strategic approach defined by General Fiévet as "the command of time in the concrete and the arbitrary, which rejects both systematic planning and irrational improvisation." [1]

VIII. Managing uncertainty

Since uncertainty is inherent to war, and will thus never be completely eradicated, no military decision can be taken purely rationally and in full possession of all the facts. One must therefore prepare to act in spite of this uncertainty. The strength of great leaders lay in their ability to prepare for the unforeseen and to equip themselves to respond to the unexpected. Clausewitz said: "The good general must know friction in order to overcome it whenever possible, and in order not to expect a standard of achievement in his operations which this very friction makes impossible." [2] Indeed, whereas strategic action is aimed at a goal whose very nature is to attempt to bypass circumstances and 'friction', tactical action – the very heart of the military profession – is, by contrast, immersed in the circumstances to which it must adapt. *Respecting the principle of reality, the effectiveness of tactical action relies on the constant adaptation of its objectives and execution.* The words of Sun Tzu counselling: "Follow the strategy that you have decided on, but adapt your tactics to the reactions of the enemy" are echoed twenty-five centuries later by General Marshall, who considers "elasticity of spirit as one of the indispensable conditions for success in the practice of the art of war." [3]

The commander will maintain his ability to operate in spite of the unforeseen through the direct preparation of his action – through *reasoned planning*, the constitution of "*reserves*" and respecting *certain*

1. General (CR) Fiévet, *De la stratégie militaire à la stratégie d'entreprise*, p. 41. [From Military Strategy to Business Strategy]
2. Carl von Clausewitz, On War, I, 7, p. 120.
3. George C. Marshall, Infantry in Battle, Harding and Lanham, Washington DC, 1939, p. 1.

principles, in particular of command – and also through, well ahead of any action, *preparing his men to operate in uncertainty*.

It is important that their mental preparation for action in an infinite variety of circumstances, ranging beyond anything they can imagine, should begin at a very early stage. Since friction will continually alter the conditions of the action, rendering all planning obsolete, and since, according to Foch, "the facts of the problem are only rarely certain and never definitive" [1], it is important for minds to have the creativity, subordinates the liberty and plans the flexibility that are needed to ensure that each individual has the ability and the courage to exploit the unforeseen. This must be done within a shared community, within which individual initiatives can converge to accomplish the operational task.

Planning

Planning and its ambiguities

Based on incomplete knowledge and gradually losing its validity, the purpose of planning cannot be to establish a list of successive actions linked to a fixed timetable. Planning cannot predict the future, nor can it disregard the uncertainty of war since, from the first exchange of fire, a confrontation tends to follow a course which can be neither predicted nor controlled. On a more modest level, planning should make it possible to envisage a number of possible future scenarios, and should facilitate mental preparation by devising manoeuvres aimed at countering the vagaries of combat and making it easier to grasp the opportunities that arise.

A good plan should provide the subordinate with the conditions in which he can take the initiative in the circumstances he will encounter. The measure of his effectiveness is the adaptability this gives him. It should be more a matter of generating mental visions of the possible, than of envisaging a war in advance. One of the key aims of planning is its educational nature, based on drawing up a framework of possible responses. It also contributes to speeding up reactions since, even though the hypotheses chosen are very unlikely to occur as such, they provide descriptions of families of cases and reactions, which can later serve as a starting point. In this way, planning boosts the commander's confidence in his ability to tackle uncertainty.

Thus, while it is necessary to plan, one should not forget that plans will never reflect reality. Planning remains an exercise in rationalising a reality which, by its very nature, will remain arbitrary. Von der Goltz

1. Ferdinand Foch, *Des principes de la guerre*, p. 99. [On the Principles of War]

noted in this regard that: "Victory itself does not confer absolute certainty on command plans. Command must take account of the circumstances of the moment and of contrary influences – they will lead to new combat. This will then change the situation, in the same way as the images of a kaleidoscope change with every turn. The general will thus constantly be required to adapt his ideas to new situations." [1]

Thus, planning – this abstract yet indispensable notion of a reality that one knows in advance to be unlikely – is inherently a complicated exercise. Whatever someone unfamiliar with it, or who knows an event only through its historical reconstruction may think, military planning is of a particular complexity that further increases the stakes. Charles de Gaulle believed that: "It is the inherent contingent nature of war that makes planning so difficult and so vast an undertaking. Seemingly simple, it presents to humans the most arduous of problems." [2] It is interesting to note that the Chinese strategy more or less eliminates the commander's difficulties with planning. Since its distinctiveness lies in its emphasis on the potential of the situation, it discards the idea of constraining the course of events by a plan prepared in advance.

Two tendencies to avoid

One of the problems with planning, is that the feeling that it *must* be done may turn it into an obligation so far removed from reality, that it becomes an obstacle to effectiveness. In his "Rise and fall of strategic planning", Mintzberg recounts the sadly fascinating example of a plan implemented at all costs during the battle of Passchendaele in the First World War. When the plan was drawn up, the weather was fine, but the action took place in pouring rain. The attack continued despite the appalling conditions and tens of thousands of British soldiers lost their lives. "A staff officer arrived on the battlefield once everything had calmed down. He looked at the sea of mud and asked himself how it was possible that we had ordered the men to advance in this awful mess."

Planning for its own sake can also become an unavoidable duty, which is then rapidly discarded as soon as it becomes necessary to deal with the real conditions. Such an attitude is linked to the instinctive awareness among some decision-makers of the futility of planning. Along these lines the American author Harry G. Summers noted in his outstanding work "On Strategy", that, in fact, planning and warfighting

1. Quoted by Ferdinand Foch, *De la conduite de la guerre*, p. 27. [On the Conduct of War]
2. Charles de Gaulle, *Le Fil de l'épée*, p. 154. [The Edge of the Sword]

deal with two separate subjects. He pointed out [1] that the very nature of war represents a dichotomy between planning and action since, where "preparation for war" is concerned with fixed values, physical quantities and unilateral action, "actual war" deals with variable quantities, intangible forces and effects, and a constant interaction of contrasts. Mintzberg gives two examples of this dichotomy. [2] Firstly, the case of the Canadian forces at the end of the Second World War. Planning had become an end in itself, with the organisation seemingly able either to plan or to act, with no apparent link between the two activities. Secondly, the case of the American forces in Hawaii. Their intelligence section had devised a plan – code-named 'Orange' – based on a surprise attack on Pearl Harbour. However, in spite of two actual alerts in July and October 1941, the various institutions carried on their daily routines unbothered, without showing any interest in the planning, until disaster struck on 8 December.

Planning must remain reasonable

If planning is necessary, it must be done reasonably, with a purpose in mind. No matter what the situation, it should never restrict the freedom of action of the commander, who remains the only weapon against the unforeseen.

Uncertainty and friction mean that, rather than simply being action, war is also re-action; this interactive dimension must appear in the planning. Thus, whereas before the engagement the plan is the strict guide to bringing together the preparatory actions, once friction and the confrontation of wills have disrupted the forecasts, the plan can only give a general idea of the manoeuvre. According to Foch, one must "constantly make use of the ability to reason and to combine, the only way to conquer the inevitable difficulties". Moltke famously summed up this notion: "No battle plan ever survives contact with the enemy" [3], an idea echoed by Foch. Since *planned action* is followed swiftly by *reaction*, the nature of war means that the ability to react, and thus to adapt, is one of the key qualities of a commander and of his troops. In his book *Stratégie de l'action* [The strategy of action], General Beaufre goes even further. He believes that, since military action consists of a series of acts, each of which can be thwarted by enemy reactions, the main priority is to *devise counter-reactions* that can be used against the opponent to

1. Summers, 1981 edition, US Army War College, p. 114.
2. Mintzberg, p. 127.
3. Moltke, On the Art of War, Selected Writings, p.92.

maintain the desired course of action; what he calls "*manoeuvre against unpredictability*". As this manoeuvre is difficult to predict precisely in sequences of more than a few successive actions, it is important to be prepared to undertake manoeuvres during the course of the action which could not possibly have been imagined at the outset.

All requirements are dictated by the situation, and again the need to adapt is reaffirmed. This is one of the key lessons expressed in Sun Tzu's "Art of war". In his opinion, victory should go not to the party that was best able to plan and keep to the reassuring certainties of the plan at all costs, but rather to the party able to adapt to the circumstances and react most effectively. There is here a clear opposition between two schools of thought. Western strategists seek to establish a plan of action allowing them to reach their desired goal by deploying sufficient resources in a chain of predetermined tactics. In contrast, Chinese strategists rely on effectiveness, without imposing their plans on the course of events; they constantly assess the situation and the balance of force, in order to identify and utilise the favourable factors in all the circumstances encountered. Chinese strategy exploits the situation as it develops, by focusing on adapting plans rather than weighing up the assets; it thus makes the most of the effect of the situation and of the potential which gradually accumulates.

In a modern application of these principles, General Pace, then Vice Chairman of the US Joint Chiefs of Staff, explained that the first lesson to be learned from the lightning campaign for Baghdad (April 2003) was the importance of speed.[1] Even more important than the speed of the action itself was the pace of re-planning and re-deploying, in other words, of adapting. A century earlier, Foch had indicated the path to follow. Utilising the initial planning effort, the ability to adapt and the principle of subsidiarity, his key concern was to "bend the operations to the requirements of the circumstances which presented themselves at every stage, in order to advance his strategy, step by step, in the desired direction towards the appointed goal. Achieving this meant keeping in mind a clear vision, no matter how sinuous or tortuous the route to be followed."[2] In support of this vision, Foch invoked the maxim of the Emperor, who claimed never to have had an operational plan, explaining that while he certainly had "his war plan – the ultimate aim – en route he adjusted the means of approaching and achieving this aim to suit the circumstances."[3]

1. AUSA Symposium, Fort Lauderdale, Florida, USA, 4 March 2004.
2. Ferdinand Foch, *De la conduite de la guerre*, p. 27. [On the Conduct of War]
3. Ferdinand Foch, *De la conduite de la guerre*, p. 27. [On the Conduct of War]

Adaptability

The ability to adapt is even more vital to military effectiveness than good planning; in a complex environment, the "logic of invention", a constant, should prevail over the "logic of programming", to use the words of Dominique Genelot. Managing the unpredictability inherent in a complex environment amounts to trying to protect oneself from it, while at the same time exploiting it, in other words, being ever ready to react to the unexpected and to grasp the, often very fleeting, opportunities. On this subject, Clausewitz advised being "prepared for unforeseen developments, so that we can in general adjust our disposition to the enemy's action" [1], and Machiavelli said that: "In war the ability to seize opportunities was more useful than anything else." [2] More recently, General Scales, concluding his analysis of the Iraqi Freedom campaign, stated that: "This war demonstrated dramatically the truism that competent militaries are those capable of adapting rapidly to the unexpected." [3]

Flexibility of modes of action and plans

Every moment of military action – necessarily and uncertainly – follows on from the moment that preceded it and, in the same way, creates the moment that succeeds it. Unforeseen events and new opportunities follow each other in an uninterrupted tide of never-to-be-repeated circumstances. Unless the action is extremely short, there is every chance it will develop along very different lines to those which originally led to it. If the circumstances are to be turned to one's advantage, this fluidity requires a keen ability to react, and thus to adapt. This flexibility applies not only to the mind, but also to the possible modes of action. Since it is impossible to predict the pattern of events with any degree of certainty, success lies not in disregarding this inescapable irrationality, but rather in ensuring one's ability to respond to the unforeseen. Plans can easily be thwarted by enemy action, and so their primary characteristic must be their adaptability. Foch referred to the need for "elasticity". In the words of Liddell Hart: "Adaptability is the law which governs survival in war as in peace – war being but a concentrated form of the human struggle against environment." The commander should "ensure that both plans and dispositions are flexible, adaptable to circumstances". This British author considers that one of the favoured ways of achieving such versatility would be to

1. Carl von Clausewitz, On War, III, 13, p.210
2. Machiavelli, *Discours* [The Discourses]
3. Williamson Murray and Robert Scales, The Iraq War, Harvard University Press, 2004, Cambridge & London, p.248

have preferably a range of plans, or at least an alternative, relating to the modes of action and the objectives.[1] He quotes the premise invoked by Bourcet that, "every plan of campaign ought to have several branches and to have been so well thought out that one or other of the said branches cannot fail to succeed." Liddell Hart emphasises the need to present a threat to a number of targets; this approach strengthens one's own adaptability, while increasing the enemy's feeling of uncertainty. His consequent inability to apply successfully the principle of economy of forces further increases his vulnerability.

To *flexibility of modes of action* must be added *flexibility of dispositions*; it must be possible to adapt to the demands of the circumstances. Such flexibility, coupled with the physical ability to move forces rapidly in order to adapt to the conditions, creates the adaptability without which the commander has no instantaneous freedom of action, no matter what resources he may have at his disposal. In his "Transformations of War", Colin notes that, in all his campaigns, the initial dispositions taken by Napoleon – always of a "remarkable simplicity" – are "at the same time those which best fit his favourite procedure and those best suited to improvised manoeuvres and all the changes. The deeper one looks into one of Napoleon's operations, the more one's admiration grows; but what is most striking is the ability of all these dispositions to adapt to all circumstances. They are designed in such a way as to respond to any new situation. No disposition adopted ever contains a commitment for the future, nor does it restrict the freedom of action."[2] In "The Edge of the Sword", Charles de Gaulle examines and summarises the first condition of such adaptability – the flexibility of dispositions: "To be able to seize opportunities and counter surprises, one should be in a disposition allowing the use of all resources."[3] These resources must also be diversified. The characteristics of the equipment must offer sufficient flexibility of use, in order to open up the spectrum of possible actions and enable the manoeuvre to be adapted rapidly to chance events. This is one of the fundamental notions behind Guibert's divisional principle: his purpose was to divide the army into consistent groupings which could act autonomously and cover all operational functions, while, thanks to the diversity of the resources assembled, also able to respond to actions of a different nature, simply by altering the composition of the components.

1. Liddell Hart, Strategy, pp 331 – 336.
2. Jean Colin, *Les transformations de la guerre*, pp. 96, 184, 185. [The Transformations of War]
3. Charles de Gaulle, *Le Fil de l'épée*, p. 202. [The Edge of the Sword]

Reserves

Whether used to counter an unfavourable chance or to exploit an opportunity, reserves are the prime means of managing uncertainty. According to Colin: "Victory is secured through the judicious use of reserves." [1] The purpose of reserves is to provide the reaction capability needed to act successfully, in spite of chance, disorder or the unpredictable.

Composed of assets separated from the planned manoeuvre and intended precisely for intervention when the action deviates from the plans, reserves are the key to adaptability. In order to be ready to withstand an unexpected attack or to seize favourable opportunities without disrupting the architecture of the dispositions, it is crucial to have forces dedicated to such a mission. This means that these forces should not be engaged in the action, neither at the first echelon nor in a supporting role; thus *reserves* are necessary. Napoleon expressed this very clearly: "War consists solely of fortuitous events; a general should always retain the elements enabling him to exploit them." [2]

Reserves *provide the commander with the strength* – "the instrument – prepared, organised, contained, maintained" [3] that enables him to influence the battle at a later stage, for which no plans exist. *The greater the uncertainty, the more the commander must have the courage to increase the role of his reserves.* Assembling and using reserves constitute one of the major responsibilities of command. As Moltke put it: "Great commanders will exercise a greater influence on the outcome of the campaign through the successful use of reserves, than through any pointless intervention in the action of their subordinates in contact with the enemy." [4] For Churchill, engaging the reserves represented the prime responsibility of the commander; once this decision has been taken he has virtually no further influence on the event. "It is in the way that they have used and preserved their reserves that great commanders have generally demonstrated their excellence; after all, once the final reserve has been engaged their role is at an end. [...] The event can be handed over to courage and to the soldiers." [5]

Reserves perform two key functions. The first is *reactive*, making it possible to retain both freedom of action and the ability to act in spite of chance. Pierre Vendryès's conclusions are quite simple: "In order to

1. Jean Colin, *Les transformations de la guerre*, p. 125. [The Transformations of War]
2. Quoted by Thomas R. Philips, The Roots of Strategy: a Collection of Military Classics, p.436.
3. Ferdinand Foch, *Des principes de la guerre*, p. 449. [On the Principles of War]
4. Moltke, On the Art of War, Selected Writings, p.157.
5. Robert D. Heinl, Dictionary of Military and Naval Quotations, p.275.

forestall chance one must have the reserves available to do so." [1] In his opinion, reserves constitute the essential tool to counter the vagaries of war; providing a source of independence when faced with chance. He uses a physiological analogy to explain the need for reserves:

> "Physiological regulation makes use of 'reserves'. For example, glucose is stored in the liver as glycogen to override possible variations in the glycaemic level, buffers in the blood provide an alkaline reserve to regulate the pH level of the blood, and oxygen is stored as oxyhaemoglobin to regulate the supply of oxygen cells. Arterial blood is the physiological environment of all cells in the body and the regulation processes ensure that at any time, throughout the body, every cubic centimetre of arterial blood has the same physiological value... It is protected from the vagaries of supply and the vagaries of use. The use of reserves is automatically initiated by the need to do so. The capacity of the reservoir organs must have a sufficient safety margin in order to cater for the greatest possible random variations. Such regulation allows the body to maintain its physiological condition at a constant level despite the changes in its relations with the external environment."

Their second function is *pro-active*. Reserves are the tool for success, allowing it either to be exploited or to be created by seizing the opportunities that arise. A useful instrument, both in times of crisis and when dealing with fortuitous events, throughout history reserves have proved to be the key to military success. It is not just the "freshness" of reserves which make them so crucial, but rather their ability to respond to the reality of war. They offer the ability to act where they are needed, when they are needed; it is this that makes them so valuable. Moltke believed "the fact that victory belongs to whomsoever has the last reserves and uses them to good effect" [2] to be a fundamental rule and Foch considered that, "the art is to be in possession of a reserve when the enemy no longer is." [3] Admiral Nelson pointed out that naval battles are won by the second wave of ships still afloat after the best squadrons have been sunk. It was precisely this concept which gave rise to the idea of the "second-strike capability" used in the nuclear strategy. Thus, before delivering the decisive blow, one should endeavour to deprive the enemy of his reserves," either by causing them to deploy in vain, by use of a feint, or through combat." [4]

1. Vendryès, p.308.
2. Moltke, On the Art of War, Selected Writings, p. 156.
3. Ferdinand Foch, *Des principes de la guerre*, p. 449. [On the Principles of War]
4. André Beaufre, *Introduction à la Stratégie*, p. 78. [Introduction to Strategy]

Establishing reserves, and then re-establishing them once the first have been deployed, forms one of the fundamental principles of action. Conversely, the lack of reserves is not only an affront to the respect that any commander should have for unpredictability, but also a grave error by anyone responsible for the destiny of a nation. In his *Traité de stratégie* [Treaty of strategy] [1], Hervé Coutau-Bégarie recalls "the terrible passage in Churchill's memoirs where he recounts his meeting with French commanders after the breakthrough at Sedan." General Gamelin had just informed him that he had no strategic reserves to plug the breach. "No strategic reserves, none! I was dumbfounded! What was I supposed to think of the great French Army and its most senior commanders? I could never have imagined that a Commander-in-Chief, responsible for defending 800 kilometres, would leave this front without manoeuvre troops." History will remember this campaign as an immense defeat for the French, who were unable to respond to the German attack or to overcome the collapse of their plans because, disregarding the principle of uncertainty, they had failed to ensure any reserves. Unfortunately this example only serves to reinforce Vendryès's observation that: "As physiology demonstrates, creating reserves is one of the functions that determines survival." [2] It is interesting to note that parachutists call the small emergency parachute activated in the event that the main parachute does not function properly, and which effectively represents their sole chance of survival, the reserve parachute.

On the subject of reserves, it is worth noting that these are not necessarily human or materiel reserves. For example, *reserves of time* are also a means of coping with the unforeseen. In daily life such reserves allow one to catch the train in spite of heavy traffic or other instances of everyday "friction". Similarly, in combat, they enable the commander to maintain his freedom of action, despite the time constraints imposed on him by operational "friction". Since this attitude to time is clearly opposed to the principle of speed during action, a suitable compromise must be established. Given the unpredictability of the conditions of future engagements, *financial reserves* also seem to play an increasing role. Following the fall of the Berlin Wall, the certainty – at the same time both horrifying, yet intellectually reassuring – of a full – on confrontation with familiar armies, in places that had been well researched, gave way to increasing uncertainty about combat types and conditions. There is no denying that, since the end of the Cold War, forces have only rarely been engaged in the conditions for which they have been prepared; they must frequently adapt rapidly to suit the operational environment. The

1. P.301.
2. Vendryès, p.313.

British offer excellent examples of this. In order to recapture the Falkland Islands, they had to launch 50 so-called "crash programmes" to procure off-the-shelf equipment or to adapt the equipment to the conditions of the unexpected campaign in the South Atlantic. Operation Telic in Iraq in March/April 2003 needed 190! With regard to the preparation of equipment, it is becoming increasingly necessary to allocate resources and to establish procedures to enable engaged forces to adapt rapidly. For their part, once it became clear, in the summer of 2003, that the stabilisation phase in Iraq would be a long one, the Americans, in their usual responsive and pragmatic manner, very quickly devised the required adaptation procedures. They set up the Agile Development Center, an organisation about 100 strong, responsible for ascertaining the requirements in the field, identifying the problem areas for a type of combat for which the forces were not prepared, and then for developing and implementing suitable remedies as quickly as possible.

Such procedures should become more widespread, since nowadays armaments and equipments seem destined almost never to be used for the purpose for which they were designed. The enemy very rapidly learns to remain below the level at which our weapons are of optimum use, thereby reducing their effectiveness. This means that, either the way in which the equipment is used, or the equipment itself, will have to be modified to meet the new requirements. The same is true of the systems for the design and specification of equipment, which seem to have difficulty in moving on from a way of thinking which became obsolete some twenty years ago. The process is generally far too long, attempting to find perfect, stabilised and universal solutions, which either do not exist or which could exist only in combination. The enemy, on the other hand, uses models, adopts the latest technologies, accepts half-measures and makes progress through gradual steps. In contrast to recent ideas, technology seems nowadays to have a levelling effect. It is the use of the latest technologies that enables the Iraqi enemy to continue to hold the American and British armies in check, more than three years after the fall of Baghdad. Using the OODA (observation, orientation, decision, action) concept so popular today in the field of digital warfare, one might say that, while established structures may have a faster operational cycle, the opponent has a much faster technological cycle. Thus, for Western armies, technology has become both a strength and a weakness. During operations the enemy knows how to get round the technological superiority and exploit the weaknesses of Western armies even before encountering them. We probably need to return to the practical attitude which allows us to meet 80% of the requirements very quickly, and move away from the perfectionism which meets 120% of the requirements after fifteen years.

The question of financial reserves raises that of *logistics* and the principles of operating on a "just in time" basis. While the action now takes place in an uncertain environment, these principles assume that the event is fully under control and that there will be no unexpected disruption. They abandon the idea of assembling stocks (in other words, reserves) and thus of funds being tied up. The disastrous effects of the unexpected – in particular, strikes – on companies that have misused these principles in an attempt to reduce costs are well known. The issue here is not to try to make a definitive decision between the comparative advantages of logistic systems based on stocks or on "just in time", but rather to recall that the methods most commonly used in the commercial world should be treated with caution in a military environment, where the inevitability of friction must always be borne in mind. The various systems each have their good points, but no one system is perfect. The situation in Kosovo in 1999 will long be remembered; the first French units equipped with Leclerc tanks were almost sent into the theatre with no heavy munitions, simply because "friction" had struck at a bad time. Similarly, the American units advancing on Baghdad in the spring of 2003 regularly encountered disruption of supplies and munitions. These supply problems – of both equipment and food – were what the GIs moving through the desert complained of most. The same was true of the IDF soldiers in Lebanon during the summer of 2006. The British in Iraq also experienced supply and logistic problems in 2003, partly as a result of the government strategy of "just in time" procurement. This Urgent Operational Requirements (UOR) procedure, as the British call it, meant that equipment and supplies were ordered at the last minute, according to the needs that had been identified, on the basis that it was "inefficient and prohibitive to purchase and maintain the equipment needed to meet all eventualities in all possible climatic conditions". In the light of the lessons learned in Iraq, and as a result of the inability of the logistic chain to supply the troops when required, the British Army has decided to review this procedure, in order to establish a more reasonable compromise between reducing stocks and ever-present operational risks.

The principle of simplicity

Simplicity as a principle constitutes an additional way of dealing with uncertainty. It encourages the capacity to react and to adapt.

By ensuring that orders are concise and clear, and also that structures are simple, both in peacetime and in ad-hoc situations, commanders enable their subordinates to operate more easily in a complex environment. The golden rule taught by the US Marine Corps to its young officers is KISS – "Keep it simple, stupid".

Simplicity of organisations

Simplicity should be a key characteristic in any organisation. Subordinations and responsibilities should be clearly visible, with a limited number of hierarchical levels; having too many levels slows down the circulation of information, increases response time and reduces the speed of adaptation. In this sense, it is by no means certain that the modern tendency to use matrices is really suited to organisations intended to operate in an unpredictable environment. Simplicity gives a sort of transparency to the organisation, in which each entity should be of a manageable size, allowing each individual to identify his peers and his hierarchical line. Military tradition groups soldiers into teams of four, with two teams forming a group, four groups a section, four sections a company and, finally, four companies a regiment. In this way, each individual can understand easily who is under his orders, who commands him and who works alongside him. Each soldier has a clear vision of his hierarchical chain and understands more easily the new links that must be created if the vagaries of the battlefield disrupt the organisation. Each leader knows his counterparts, and thus each unit can assist its neighbour without the need to refer to a higher level, thereby making it possible to react rapidly. The military rule "know your commanders" is not only a means of preserving authority and discipline, but also of obtaining a rapid response during combat.

Success through simplicity, clarity and freedom of action

THE LIBERATION OF PARIS

2nd Armoured Division – operation orders for 24 August 1944

I. Mission:

1° Take Paris;

2° Secure Paris by occupying the roads between Ivry-sur-Seine and Neuilly sur Marne;

- by advancing elements into the region north-east of Paris;
- by keeping a reserve element in the centre of Paris.

II. Intelligence: the enemy has a number of support posts, which are not interlinked. These support posts are most dense in the region south-west of Paris.

III. Disposition:

Primary Tasks

Task Force GT V:

a) Advance along the axis Arpajon – Sceaux – Paris, which will represent the principal effort, using minor roads and avoiding the major routes.

b) Enter Paris in the direction of the Pantheon, then cross the Seine and exit through Vincennes and Charenton. Hold the bridges over the Marne from Ivry-sur-Seine to Neuilly-sur-Marne inclusive.

c) Put in place a reconnaissance screen to hinder enemy movements.

HQ at the end of the mission: Porte de Vincennes.

Secondary diversionary tasks

Task Force GT L:

a) Advance along the axis Dampierre, Chevreuse, Châteaufort, Toussus-le-Noble, Les Loges, Jouys-en-Josas, Villacoublay, bois de Meudon, Pont-de-Sèvres.
b) Secure Sèvres and advance 2 S/Gp to Versailles and towards Paris.
c) On completion of this phase, and after being relieved by reserve elements from Versailles, move with the whole force to the centre of Paris (Place de la Concorde) as a mobile reserve.

HQ: Initially: Pont de Sèvres; later: Hotel Crillon, Paris.

Task Force GT D:

a) Resubordinate 3rd RAC (Colonial Artillery regiment) to GT V.
b) Follow GT V, be prepared to:
   – either support GT V with all means;
   – or support GT L by sending a S/Gp towards the Pont de Sèvres.
c) Clear the centre of Paris.
d) If the various operations by GT V and GT L are successful, advance elements towards the Pantin region, to the north of Paris.

HQ: Pantin town hall.

Elements under Morel-Deville: to maintain their initial positions and create the maximum volume to simulate a direct attack in the direction of Saint-Cyr. At the end of that phase, regroup as a reserve under the orders of Colonel Rémy.

FTA (Army Air Defence): the batteries will initially follow the progression of task forces to which they are assigned, ready to provide Air Defence in the centre of Paris as soon as Paris falls.

Engineers: the reserved engineer elements under the orders of the battalion commander in charge of the divisional engineers will initially remain at Rambouillet and subsequently be prepared to carry out mine-clearance on the route Rambouillet, Versailles, Paris; to be regrouped at the end of the day.

Rémy's force and reserve elements: under the orders of Colonel Rémy, advance to Versailles as soon as it is liberated and carry out mine-clearance on routes while awaiting counter-attack missions. Subsequently advance to Paris (Longchamp).

IV. Divisional HQ locations:
   – Forward HQ: behind GT V, then Hotel Crillon, Paris.
   – Main HQ: Rambouillet, Versailles (Lycée Hoche), Longchamp
   – Base: Rambouillet.

V. Traffic Control:
   – one DCR traffic company available to GT V;
   – one DCR traffic company available to GT L.

Subsequently, 2 DCR traffic companies available to the general commanding the 2nd Armoured Division: Place de la Concorde.

VI. Air Support
   – Main detachment with GT V;
   – Secondary detachment with GT L.

VII. H-hour: 07.00.

HQ Rambouillet 23 August 1944 18.00

Signed: General Leclerc, Cdr 2nd Armoured Division.

The simplicity of orders

Just as with the simplicity of structures, the simplicity and brevity of orders improves the ability to manage uncertainty. Such simplicity must be given added weight in order to communicate what Foch referred to as "the thought behind the action." [1]

General Fiévet believed that: "Orders should fix the objectives and concrete goals to be attained, but should be strictly limited to that; they should indicate the way in which the objective is to be attained, while largely leaving the initiative to the subordinates." [2] Orders indicate to each individual the purpose of his action without clouding his view with secondary considerations; they provide an answer to the general question behind any action – "What do we have to do and why?" – having had all superfluous elements removed through a solid compromise between the need for convergence and the need for initiative. Their function is thus *to impose discipline while organising the room for manoeuvre*. Clearly presented combat orders (Alpha, Bravo, Charlie…) should preferably follow a known order, enabling everyone to identify the elements they need. They set out clearly the commander's *intent* – the "why?" – and his *major effort* – the "what?". Together the *intention* and the *major effect* will ensure that everyone seeks to achieve the higher aim. This *overall vision*, which goes beyond the turbulence of circumstances, will direct the cohesion of individual actions, beyond the disorder, even when the vagaries of combat rupture the cohesion of groups or the links and liaisons between the different entities, or even remove the relevance of the initial missions.

In this way, the simplicity of orders reinforces the *principle of unity*, in both the principal action and the supporting action, which is an essential condition for an effective ultimate collective action. This principle, which dominates the diversity of events, guarantees the synergy of individual actions by ensuring the cohesion of parties which, while dispersed, are still integrated into the operational project. Moreover, simplicity reduces the chances of misunderstanding, thereby limiting the dangers of friction and facilitating initiative. A clear definition of the undertaking (which must be worded to respond clearly to the "what is it?" element of the Foch reasoning) constitutes the essential factor linking the myriad individual attempts to adapt to the unforeseen. This clear definition allows decentralisation to be guided by the ultimate aim, with each commander operating at his own level to contribute to accomplishing the mission entrusted to the superior level. Speaking on

1. Ferdinand Foch, *De la conduite de la guerre,* p. 155. [On the Conduct of War]
2. Fiévet, p.61.

5 June 2003 [1], about the role of the commander in the new environment of operational action, General Thorette, Chief of the French Army Staff, said simply: "The clarity of orders is essential." Here he instinctively echoed the words of General George Marshall, who felt very strongly that: "The only orders worth giving were those that could be prepared and delivered quickly, and that could be readily understood by non-professionals."

On this subject, General Thonier, the key actor behind the success of Operation Artémis in the Democratic Republic of Congo in summer 2003, which took place at a very high level of uncertainty, wrote of the need "to remove any emotions by giving clear orders".

Versatility as an objective

The growing uncertainty regarding the precise circumstances of the conditions of engagement is leading to changes in equipment, the men who operate it and the organisations they are part of. If all parties are readily able to face diverse situations, many of the problems caused by uncertainty will have been solved. On the other hand, versatility is at loggerheads with the specialisation which, for its part, ensures effectiveness in a given situation. The difficulty is thus to find the right balance between the two concepts and, later, to define the level of this versatility. Should each item of equipment be versatile or the force as a whole? Or should it be their composition that makes units versatile, which in fact brings us back to the Guibert's divisional principle? In any case, in March 2004, after his troops had been deployed in Iraq for a year, the Chief of Staff of the US Army noted that: "In situations as unclear as those encountered in the field, it was not possible for units to specialise; they had to be capable of responding instantaneously to combat conditions very different from those they had expected." [2] In the absence of any utopian equipment which would be both versatile and effective in all circumstances, they needed a varied range of equipment, providing the appropriate specialisation for each phase of combat.

There are many options, but *versatility*, that is to say the ability to change the mode of operation according to the circumstances, is increasingly sought after in modern armies, with each adopting its own specific solution or solutions. For some time, the French Army has adopted the principle of the so-called "double qualification", with the

1. 4th International Forum on Doctrine "Future Operations and the Organisation of Command".
2. AUSA Symposium, Fort Lauderdale, Florida, USA.

aim of ensuring that each soldier is able to operate at least two major systems and to perform two different jobs, such as tank driver and first-aider. The US Army, relying on its strength and numbers, traditionally favours each entity having a specific character, preferring to train its units for a single type of equipment and a single type of mission, and to exchange the units (if required) as the situation evolves. The US Marine Corps operates differently. As an expeditionary corps, it has, by definition, limited resources, with no possibility for immediate rotation once the units are in action. Versatility is encouraged at the lowest levels. For example, each member of a combat section is trained to operate all the equipment in the section. It is interesting to note that the recent (1999) inventor of the concept of the "three blocks war", General Krulak, was a Marine Corps commander. By "three blocks war" he meant that, in a modern conflict, the same unit could very well be called upon to conduct, at the same time and without prior notice, three very different types of mission (coercion, peacekeeping and humanitarian aid), requiring each unit to have a remarkable ability to adapt. [1] For the British, one of the important lessons of Operation Telic (Iraq, 2003) is also the requirement for units to be versatile. While still believing in the need for armoured units (capable, in the first wave, of withstanding fire and of pursuit) and lighter forces, they also believe that, in addition to median forces between the two extremes, it is important for each module of the force to be able to switch rapidly from one type to another, by adding or removing equipment.

This *principle of modularity* – the capacity to build ad-hoc operational entities on elementary operational modules, on the Lego principle – represents a major step towards versatility. This revolutionary principle, whereby the elementary operational unit is not intended to operate under its peacetime organic commander, nor with the other units with which it usually trained, was adopted by the French Army in the mid-1990s. [2] At the end of 2003, the reality of the stabilisation operations in Iraq forced the US Army to adopt this principle, with the aim

1. "In one moment in time, our service members will be feeding and clothing displaced refugees – providing humanitarian assistance. In the next moment, they will be holding two warring tribes apart – conducting peacekeeping operations. Finally, they will be fighting a highly lethal mid-intensity battle. All on the same day, all within three city blocks. It will be what we call the three blocks war." General Charles C. Krulak, Marine Corps commander.

2. Provided it is applied reasonably, the principle of modularity is effective; if not, it becomes what is sometimes referred to as "bi-modularity", which is contrary to the principle of cohesion that is fundamental to operational effectiveness, in which the human dimension will always be more important than the technical dimension.

of rendering the very structures of the units more flexible. Apart from abandoning certain major armaments programmes left over from the Cold War and now irrelevant due to the changes in engagements, probably the most spectacular decision linked to this desire to adapt was the decision to reorganise the structure of the major formations in favour of modularity and adaptability. To this end, the Chief of Staff launched the ambitious plan "Relevant and Ready", with the clear objective of "systematically questioning the institutional hypotheses, organisational structures, models, policies and procedures in order to construct a force which would be better adapted and more responsive." [1]

The principle of modularity is primarily intended to make it easier to put together a force before projection; at the same time, by tailoring it to suit requirements, it creates attitudes and procedures which make it easier to restructure during an engagement and to adapt to circumstances. General Scales noted that: "What was particularly impressive in this conflict was the ability of soldiers and marines to cobble together ad-hoc units to meet unforeseen circumstances and for even the smallest units to be creative tactically and to act against the enemy without seeking permission." [2] From this campaign he also took away the idea that: "The army of the future will require a large kit bag of capabilities that it can deploy and fit together, sometimes in the middle of battle, to meet the many exigencies of this new era in warfare." [3]

This example and these ideas illustrate the considerable role of the new possibilities offered by advances in communications systems, known as the digitisation of the battlespace. [4] Firstly, in the past, the units' difficulties with autonomous navigation necessitated considerable rigidity with regard to the dispositions and meant that, once launched, the manoeuvre was irreversible. Nowadays, the ease with which units and their superiors can locate friendly units, and the accuracy of navigation, mean that both dispositions and manoeuvre can be far more adaptable. Most importantly, the notion of permanent structures is likely to disappear, since the performances of modern communications systems will allow pyramid structures to be replaced by networked organisations. The flexibility surrounding the creation of networks means that it will always be possible to adjust hierarchical

1. Peter Schoomaker, Our Army at War – Relevant and Ready, 11 December 2003.
2. Williamson Murray and Robert Scales, The Iraq War, Harvard University Press, 2004, Cambridge & London, p. 249.
3. Williamson Murray and Robert Scales, The Iraq War, Harvard University Press, 2004, Cambridge & London, p. 244.
4. *Perspectives tactiques* [Tactical perspectives] by Guy Hubin offers further interesting reading on this subject.

relationships, to create or remove levels of responsibility and to adapt the size of the force and the manoeuvre area to a given echelon. This will allow extremely flexible organisations – able to react and to adapt – governed by the reactivity of meshed networks rather than the constraints of pyramidal links, thereby offering great tactical flexibility through the continuous adaptation of dispositions and composition. [1]

Special forces offer the most convincing illustration of the fact that versatility is indeed a powerful means of managing uncertainty. By definition, these forces are designed to be deployed in unknown and often new situations. Consisting of elite personnel, they are trained to operate a wide range of equipment and to be able to adapt, without concern for specialisation, to a large number of situations. Their training specifically includes constantly encountering unexpected situations.

A command style encouraging initiative

It would be illusory to imagine that, in action, 'command' is a synonym for 'control'. The conduct of war implies the need to command, but the nature of war means that it is impossible to 'control' with any degree of accuracy or certainty. Combat units are groups of human beings which cannot be controlled in the way a chess player controls each of his pieces. A gunner controls his weapon and a pilot controls his aircraft, but a captain can no more physically control his company than a squadron commander can exert full control over the formation under his orders, even if video games would lead us to believe otherwise. An operational commander may sometimes anticipate the reactions of the enemy, and influence his action by seizing the initiative, but he will never be able to exert full control over either the enemy or the situation. The commander leading a unit in modern warfare is more like the captain of a football team than a chess champion; the fluid, changeable action, whose parameters can never be fully defined, will always owe its success to the combination of the general idea behind the manoeuvre (and the corresponding essential coordination measures) and individual initiatives. Centralised control could never hope to produce the vast numbers of essential adjustments at the rate needed to ensure that the mechanics of the war machine function perfectly. These adjustments must come from a physiological or animal logic, where each entity adapts freely in the pursuit of survival and

1. It will, however, be necessary to take account of the side-effects — many of which may be negative — of these new possibilities and to put in place measures to reduce any damage.

general effectiveness. Synchronisation can be centralised, however, the harmony of individual actions can only derive from the ability to adapt, thus from freedom of action. In this sense, success in war owes more to *indirect command* – through the spirit, the sense of the mission and freedom of action – than to direct command.

War is an immensely complex phenomenon and military action takes place in a chaotic, confused and largely unpredictable environment, in which precise or strict control is impossible. Any command style or organisation which ignored this fact would be doomed to failure. Command can only be a continuous process of adaptation, in pursuit of success and survival; the military organisation should follow a process of constant change and adopt an organic stance, relentlessly seeking an unattainable balance in its never-ending quest to adapt to its fluid environment.

Do not be too prescriptive

Thus the very nature of war imposes rules: orders cannot, and indeed should not, stipulate everything. How warfare is to be conducted should be defined only to the extent demanded by the need for overall coordination; the intention being, moreover, to limit the requirements for coordination, in order to give initiative free rein. Rather than imposing procedures, it is better to lay down what should be avoided when carrying out the mission. In a modern combat environment, it is particularly important to *define the mission and the **'freedom of action bubble'** of the subordinate*. Since a commander immersed in action determined by circumstances needs autonomy to be able to act effectively in spite of friction, *orders should direct and shape the initiative, while at the same time creating the conditions necessary for it to flourish*. The architect of the action is fully aware that he will be unable to control and regulate everything; having defined the mission and the general intention underlying it, he leaves it up to the men in the field to decide how best to react to the reality they encounter. *Commanding by influence rather than by instruction*, he knows that, by preserving the freedom of initiative of his subordinates, he will liberate their creative energy through the decentralisation of the power of decision. General Patton was particularly confident in the ability of his men to do their best in the spirit of the mission, provided they are given the capability: "Tell them what to do but don't tell them how – their genius will surprise you." Almost 60 years later, during the second Gulf War, this act of faith was echoed in a dialogue between two other generals discussing the seizing of Baghdad:

General Blount, commander of the 3rd (US) Infantry Division (in Baghdad, 7 April 2003): "I think we can hold it."

General Wallace, commanding the 5th (US) Corps (in his HQ south of the Euphrates): "Are you sure?"

Blount: "Roger. We have secured all the intersections. We can bring in the tankers. Same goes for the ammunition. We have good communication lines. I think we should stay."

Wallace: "Go ahead. Good luck. Out."

This example shows yet again how, in the words of Jean-Francois Phélizon, "for the tactician nothing is established; it is only by accepting the situations as they present themselves and, through them, the principle of reality, that he will succeed." [1]

Orders designed to protect the freedom of action

Thus, according to Dominique Genelot, the action conducted will ultimately be a conjunction of the intentional, the "considered" – based on forecasting and planning – and the "unpredicted" – both favourable and unfavourable – unexpected by definition, since it has not been taken into account during planning. The skill therefore consists of integrating the unpredicted and the considered to achieve optimum results. Because of the complexity and the speed of the action, the integration process can no longer be confined to the highest level; it must be delegated, down to the lowest level, by expanding the right to take the initiative.

To encourage this autonomy on the – increasingly empty and increasingly large – battlefield, and place it in a framework suited to the overall action, military experience clearly distinguishes – in both operational and peacetime orders – between the mission and its execution, the details of which will be decided by the subordinates who are in the field and able to judge the circumstances. Expressed clearly, the mission constitutes the '**Project**', that is to say the undertaking, or the reason behind the action and also the decisions; it is this Project which enables efforts and initiative to converge, in spite of "fog" and friction. The mission will endure irrespective of the circumstances, even though these may lead to considerable changes in the execution. Charles de Gaulle emphasised this crucial notion of the autonomy given to the commander: "The only path leading to a sense of enterprise is decentralisation. Fixing the objective to be attained, stimulating the desire to win and judging the results are the task of the superior authority on behalf of each unit. But as to how it should be done, this is up to each individual." [2]

1. Phélizon, introduction to *Trente-six stratagems*, p. 8. [Thirty-six Stratagems]
2. Charles de Gaulle, *Vers l'armée de métier*, p. 93. [Towards a Professional Army]

Since the overall action goes beyond what each individual perceives, and since the initiative must be channelled, it is important to bring together the spirit and the letter of the mission; in other words, the "*I want*" intended to clarify the logic of the mission. Thus, if circumstances disrupt the actual implementation of the individual missions or, conversely, if they enable an opportunity which goes beyond the letter of the mission to be seized, the various initiatives will still converge on the same aim. Furthermore, the logic used at the higher level must also always be communicated to the subordinates; in other words, the "*in order to*". As General Fiévet put it: "This idea of manoeuvre facilitates the understanding of the 'spirit of the orders', and thus of the sense of the action undertaken. If this is borne in mind, all actions will be directed at implementing it." [1] It is interesting to note that the Germans place great importance on enabling a subordinate to follow the logic of his superior. In line with a principle adapted by the Reichswehr, when a major effort was made to increase rapidly the numbers of the reduced cadre army imposed on the defeated Germany, German officers are trained to command not only at their own level, but also at the level above. Thus, a lieutenant is capable of commanding a company and a captain a regiment, thereby allowing them to relate their own actions to those of their superior, with whose problems they are familiar. This principle clearly favours operational effectiveness.

By establishing a clear mission, within a wider framework, while at the same time ensuring sufficient room for initiative in the execution, a commander ensures the ability to act in the spirit of the mission, while adapting to the reality of the situation. Uncertainty is thus partially overshadowed by the ultimate aim, while the ancient principle expressed by Sun Tzu, that "all military conduct is governed by circumstances" [2] remains valid.

The future Marshal Foch's book "On the Conduct of War" was entirely devoted to the Franco-Prussian War; in it he analyses the causes of the opponent's successes. Sadly, his account reports French behaviour in complete contrast to what has just been described. According to Foch, the French system was based on a "false perception by the command of its rights and duties [... *which took no account...*] of distance, time, possible accidents and even the independent initiative of the opponent, all things which necessitate some form of spontaneous response by the subordinate commanders. This led to absolute, and moreover purely theoretical, centralisation, at odds with practical

1. Fiévet, p. 61.
2. Sun Tzu, The Art of War, Section 10.

requirements and depriving all subordinates of any right to think and act without orders. Among the subordinates this in turn led to an ingrained habit of blind, inert and absolute subordination, as a sovereign rule. This then gave rise to inactivity and inaction, followed by abandoning the idea of an offensive action since the subordinate, having remained inert for most of his career, was incapable of becoming a decisive commander. A senior commander, suppressing systematically the ideas and will of his subordinates, and claiming to be in sole command of his troops, as if they were chess pieces, should not be surprised to find himself surrounded in difficult times by simple pawns, rather than energetic assistants." [1]

The Prussian model

The Prussian school offers an excellent example of the promotion of initiative through the style of command in these words borrowed from Frederick the Great, addressing one of his officers: "Sir, the King has promoted you to the rank of officer so that you can determine for yourself when you do not have to obey."

The notion of the inescapability of uncertainty has been embodied in the development of the *Auftragstaktik*, rooted in the philosophy of Moltke and described by him thus: "Given the diversity of the situation and the rapid changes, it is impossible to define binding rules; only general principles and opinions can serve as a guide." [2] Moltke observed the great difficulty that existed in the middle of the 19th century in commanding armies of over 200,000 men, and believed that the senior generals, "should be entrusted with general missions based on clearly understood objectives and should then accomplish these missions through aggressive combat directed at the enemy." [3] After the Franco-Prussian War of 1870, Moltke noted that: "A favourable situation would never be exploited if commanders waited for orders. The most senior commander, and the most junior soldier, should be aware that omission and inactivity are worse than an error in the choice of resources." [4]

In Moltke's opinion, the *Auftragstaktik* principle meant that the directives should set out the commanders' intent, while leaving the subordinates sufficient room for initiative. Both the dogmatic implementation of

1. Ferdinand Foch, *De la conduite de la guerre,* pp.164-165. [On the Conduct of War]
2. Moltke, On the Art of War, Selected Writings, p. 132.
3. A Genius at War. The German Army and The General Staff, 1807-1945, TN Dupuy, London 1977, p.35.
4. Ibid., p. 67.

an operational plan and the rigidity of operational command were wrong; the emphasis should be on the independent judgement of an officer: "An order should contain everything the subordinate is unable to decide, and nothing more." [1] Eugène Carrias believed that, "the strength of Moltke's doctrine lies in the amount of room it gives to initiative, thereby permitting, in the face of apparent disorder, which in most cases is more of a problem in theory than in practice, rapid adaptation to the unpredictable circumstances." [2] In the words of Charles de Gaulle: "Once the campaign had begun, Moltke refused on principle to lay down anything other than extremely general intentions, expressed in a few broad directives. He entrusted his subordinates with all of the execution, knowing that they would be more aware – and at an earlier stage – of changes in the situation than he would be, and in most cases, leaving it to them to coordinate their efforts themselves, based on the unity of doctrine." [3] The effectiveness of *Auftragstaktik* was established in peacetime, when officers had to become accustomed to acting not according to *rules* or *procedures,* but rather according to *principles*: "In peacetime, the custom of acting according to correct principles can only be acquired if one accepts that officers must be granted the greatest possible independence." [4]

Foch believed that, more than Moltke's personal genius, the keys to success in the summer of 1870 were the capabilities of the commanders and the organisations, together with the methods of command. The first of these was the subordinates' capacity for initiative, coupled with, the adaptability of the Prussian system. The dedication to initiative was taken so far that "the commander handed over to his subordinates and moved into the wings, disappearing from the enemy, perhaps to look elsewhere". The Prussian High Command had understood that its role ended precisely where that of its subordinates began, as only they were able to deal successfully with the unexpected, while keeping to the general spirit of the mission. Thus, faced with the pressing need for quick decisions, giving subordinates the capacity for initiative was Moltke's answer to the High Command's own inability to respond to the turbulence of events. Knowing that he was unable to govern everything, Moltke was confident that the spirit of enterprise would conquer chaos. As Foch put it: "He covered the errors and faults of subordinates with his own authority, accepting responsibility for them. Not only did he avoid blaming those in the field, which would have discouraged them

1. Quoted by Von Schlichting, in *Le testament de Moltke* (École supérieure de guerre, Paris, 1903), p. 23. Moltke's Legacy]
2. Eugène Carrias, *La pensée militaire allemande,* p. 258. [German Military Thinking]
3. Charles de Gaulle, *La discorde chef l'ennemi,* p. 18. [Discord Among the Enemy]
4. Moltke, On the Art of War, Selected Writings, p. 133.

from acting, he approved their actions, which encouraged them. He believed that their fearless initiative would have beneficial results, since as a rule it was well directed." [1]

Facing this Prussian system, made malleable and adaptable by the freedom for individual initiative, was the French camp, in which Foch observed the opposite: "A notable characteristic of all French commanders was their complete passivity, always waiting for an impetus from outside. The French generals only acted on firm orders from on high, always following instructions very closely, which led to their being completely disconcerted whenever anything unexpected occurred." [2] These diametrically opposed attitudes led Foch to distinguish clearly between "*passive obedience*" and "*active obedience*, the result of the constant call for initiative", and to consider that, while "intellectual discipline" is essential, it is of no value without the other form of discipline, which he called "intelligent and active". [3]

Foch thus believed that *discipline* cannot exist without active *conscience*, in other words, without understanding, adherence, will and initiative. In Chapter 4 of his Principles of War, whose very title "Intellectual discipline – freedom of action" spells out a philosophy of action, he proposes a clear definition of discipline:

> "To be disciplined does not mean that one does not commit any breach of discipline; to be disciplined does not mean, either, that one only carries out an order received to such a point as appears to be convenient, fair, rational or possible. It means that one frankly adopts the thoughts and views of the superior in command, and that one uses all humanly practicable means in order to give him satisfaction. To be disciplined does not mean remaining silent, abstaining or doing only what one thinks one may undertake without risk; it is not the art of eluding responsibility; it means acting in compliance with orders received and therefore of finding in one's own mind, by effort and reflection, the possibility of carrying out such orders. It also means finding in one's own will the energy to face the risks involved in execution. In high places, discipline thus equates to activity of the spirit and applying one's character."

The commanders' initiatives – described here by Foch, and trained systematically in peacetime through encouraging independent thinking – remained one of the keys to German success. The use of initiative as a

1. Ferdinand Foch, *De la conduite de la guerre,* p. 160. [On the Conduct of War]
2. Ibid., p. 163.
3. Ferdinand Foch, *Des principes de la guerre,* p. 203. [On the Principles of War]

tool for and against the unexpected became a tradition from which the French armies suffered in two world wars. [1] At the end of the 19th century, General von Blume observed in his book "Strategy", that: "Nothing that can be left to individual judgement without affecting the unity of the troops should be regulated or centralised; prescriptions should cease at the point where it becomes impossible to predict events with any certainty." [2] In 1936, the German tactical regulations – *Dienstvorschrift Truppenführung* – stated that: "Too many orders, especially in combat, runs the serious risk of jeopardising the independence of subordinates." In 1938, the official Wehrmacht doctrine confirmed once more this bias towards tactical subsidiarity: "Our concept of the conduct of combat allows the commander, even of a small unit, great freedom of action; he thus has the opportunity to exploit any favourable situation and to achieve success by his own doing. It may also lead to disappointment [...] We counter the more schematic French mode of operation with rapid thinking, decision, command and action." [3] During the Second World War, the tension between the value placed on initiative and the cult of obedience played a large part in German tactical success. The command could count on its officers; an officer failing through lack of initiative would be considered just as blameworthy as one whose failure was due to ignoring orders. [4] Sadly, as the historian Yves Durand [5] recorded: "The Wehrmacht campaign in France, in May-June 1940, was a war of opportunities fully grasped for the Germans, and, in contrast, for the French, a war of opportunities missed."

There is possibly no better example of a fortunate initiative in the general spirit of the mission, than that of the fateful breakthrough at Sedan. Guderian's XIXth Panzer corps was attacking in a southerly direction, with the strategic aim "of securing a bridgehead over the

1. However, one should not ignore the other side of the coin: the unfortunate initiatives, including the famous "disobedience of General von Kluck", as Charles de Gaulle put it. In early September 1914, underestimating the danger presented by the troops stationed in Paris, and believing himself to be better informed than the GHQ, Von Kluck decided to follow his own ideas. Instead of keeping to his mission of providing general cover for the German forces, he ventured with his army between La Ferté-sous-Jouarre and Château Thierry, thereby creating conditions favourable to the offensive launched by General Joffre on the Marne. His manoeuvre definitively compromised the Imperial advance.
2. Von Blume, *Stratégie*, Paris, 1884, p. 169, 174. [Strategy]
3. *Militär-Wochenblatt*, no. 29, 14 January 1938: *Die Angriffshetze der Infanterie* [The Infantry's Rush to Attack].
4. Williamson Murray, The German Response to Victory in Poland, in Armed Forces and Society, winter 1981.
5. Yves Durand, *Histoire de la deuxième guerre mondiale,* p. 221. [History of the Second World War]

Meuse at Sedan, in order to help the infantry divisions that would follow to cross that river. No instructions were given as to what was to be done in the event of a surprise success."[1] By 13 May, Guderian had secured a small bridgehead. A day later, he had expanded the bridgehead to the south and west, but had not broken through the French defences. Lacking instructions on how to continue the battle, Guderian opted for a westward attack in line with the strategic aim of the campaign. "The 1st and 2nd Panzer Divisions received orders to change direction with all their forces, to cross the Ardennes Canal, and to head west with the objective of breaking clear through the French defences."[2] Guderian's forces broke through and, as we know to our cost, sped all the way to the coast at the English Channel, causing the rapid collapse of the Anglo-French defence system.

This principle of "objective-based command" remains very firmly anchored in German operational culture. In contrast to the widely-held view that German military conduct consists of following the rules and adhering strictly to the hierarchy, it is important to understand that, behind this seemingly rigid attitude, lies the desire to create, and then to safeguard, room for initiative at each of the subordinate levels. The 1998 Navy, Air Force and Army directives are clearly marked by this view, stipulating that "The commander announces his intent, sets out clear and realistic objectives and provides the forces and the assets. He does not lay down the details of execution, other than to ensure cohesion, or where expressly required by the political or military situation. He allows whoever is in direct charge the freedom to carry out the mission. Such freedom is essential for speed of decision and execution." At the tactical level, this aspect is highlighted in the doctrine, in particular for combat in urban areas, where action will necessarily be very decentralised and where the dispersal of the units, coupled with the difficulty of communication, means that delegation is essential for effective operation.

One of the current reflections within the Bundeswehr is how the digitisation of units – with all the temptations and ease of bypassing intermediate levels this implies – can be rendered compatible with the enduring principle of *Auftragstaktik*. Here they agree with the British and the Americans who – particularly in so-called 'low intensity' operations, where the tempo facilitates intervention by the upper echelons – increasingly dread the effects of the 'long-handled screwdriver'. This new electronic device, with its long reach, makes it technically possible

1. Guderian Heinz, Panzer Leader, New York, E.P. Dutton & Co., 1952, p. 97.
2. Ibid., pp 105, 106.

for the strategic levels to solve the tactical micro-problems of a situation from which they are physically cut off and thus unable to understand the complexity.

A model… borrowed from the French

While the majority of military thinkers recognise the operational power of command styles based on *Auftragstaktik*, such as mission command (to be discussed hereafter), very few know that it is French – and moreover, Napoleonic – in origin. Directly and indirectly.

Its direct heritage is linked to the gradual creation of army corps during the revolutionary and Napoleonic eras. Armies in the 17th and 18th centuries consisted essentially of homogeneous subdivisions – foot soldiers, mounted troops, guns – that moved together, and whose dispositions and synergies had to be brought together under the orders of a single commander more or less at the point of battle. One can imagine the slowness of movements, the logistic burden, the lack of flexibility, the predictability… In contrast, the army corps – a reduced, all-arms army – could act independently of the other corps, "marching separately", and coming together only to fight alongside each other; it moved and fought as a separate entity.

Each corps comprised the assets suited to its mission, enabling it to sustain an engagement until reinforced by another corps, which would never be more than one day's march away. The corps advanced along a number of routes, thereby increasing its speed, as opposed to enemy armies, which tended to remain tightly grouped and move along a single axis. These autonomous, and virtually self-sufficient, formations made for a previously unparalleled degree of operational flexibility. The composition of the major formations was continually adjusted, either to respond to immediate needs, or to deceive the enemy. At Austerlitz in 1805, Austrian intelligence came up against this very situation; the changes in structure were difficult to follow, with the information gathered being constantly out-of-date, as it failed to keep pace with the rapid developments.

While Napoleon was personally involved in drawing up the campaign plan, often in great detail, and also maintained overall direction of operations and the general thrust of events, when it came to implementing the plan he left the initiative with his subordinates, thereby allowing them to make the best use of the new structures. If its freedom of action had not been founded on the great degree of autonomy accorded by the Emperor to his commanders, the army corps would not have been such a resounding operational success. Such autonomy was,

in fact, inevitable given the great distances which separated the corps and the resulting communication problems. Good reciprocal knowledge, a common doctrine and mutual trust were of course fundamental to the success of the system. [1]

It is thus here that one finds, indirectly, the French heritage of *Auftragstaktik*. The brilliant victories over the Prussian Army at Jena and Auerstedt in 1806 are given as the starting point of the significant reforms which led to the Prussian revival. The military reforms formed part of the change in direction; there was had no hesitation in taking direct inspiration from certain principles of the revolutionary armies and from the Napoleonic style of command which had proved so effective. Scharnhorst, whose key role is well known [2], taught that the French victories in 1806-1807 had been achieved through "the total and aggressive commitment of French military commanders to serving the will of Napoleon [...] even without orders and many miles away." [3] In other words, through the commanders' ability to use their initiative and to synchronise their own actions in accordance with the logic of the higher level.

A seminal model of the British style of command

The new contexts in which engagements take place and the increased level of uncertainty surrounding decision-making have led most modern armies to adopt the principle of adaptability through decentralisation and delegation.

The British Army, for example, has developed a command philosophy derived from *Auftragstaktik*, which they call 'mission command', and which was adopted formally in 1987. An essential balance between control and delegation, this principle requires "a command style founded on the decentralisation of command, freedom, speed of action and initiative, the key to success." The British recognise the Napoleonic roots of this style of command, but also claim quite rightly to have a striking example in their great Admiral Nelson. Before Trafalgar, he wrote to Admiral Cuthbert Collingwood, commanding the

1. For more on this subject, see Chapter 1 of The Utility of Force, Sir Rupert Smith, Penguin Books, London, 2005.

2. Scharnhorst, Gerhard (1755-1813), Prussian general. After the Peace of Tilsit, he, together with Gneisenau and Grolman, became the great re-organiser of the Prussian Army, which became the crucible of the new Prussian patriotism. He is often considered to be the founder of the modern German Army.

3. A Genius at War. The German Army and the General Staff, 1807-1945, TN Dupuy, London 1977, p. 35.

second column of ships, that he should feel "perfectly at ease respecting my intentions and to give full scope to his own judgement for carrying them into effect."

Today, official texts state that: "Command should exercise minimum control over the forces in a way that does not restrict their freedom of action, it being ultimately up to the subordinate to decide the best measures to take for the success of his mission." [1] In the interests of developing the mobility and responsiveness of units, the principle of mission command is used in a climate of mutual trust and acceptance of responsibilities. The superior has confidence in his subordinates' ability to act in the spirit of his general intent, and in accordance with the circumstances. The delegation of authority to commanders in the field has increased; they are no longer given detailed orders but rather their superior's 'intent', as well as the material resources to apply initiative "in order to enable them to conduct their mission with the maximum freedom of action." [2]

According to the general doctrine publication of the British Army [3], Mission Command comprises five key elements:

1. A commander gives his orders in a manner that ensures that his subordinates understand his intentions, their own missions, and the context of those missions.
2. Subordinates are told what effect they are to achieve and the reason why it needs to be achieved.
3. Subordinates are allocated sufficient resources to carry out their missions.
4. A commander uses a minimum of control measures so as not to unnecessarily constrain his subordinates' freedom of action.
5. Subordinates then decide for themselves how best to achieve their missions.

In this process the intent – and its clarity – are fundamental. Field Marshal Slim recalled this in a lecture to the Staff College on 2 November 1967:

> "I have published under my name a good many operational orders and a good many directives… but there is one paragraph in the orders that I have always written myself… the paragraph relating to the intent."

1. British Defence Doctrine, JDCC, Shrivenham, UK, October 2001, p3-7
2. Report on Operation TELIC (Iraq, March-April 2003).
3. *Army Doctrine Publication Land Operations*, DGD&D, May 2005.

Mission Command is designed to promote a system of command balancing unity of effort with freedom of action at all levels. It requires the development of trust and mutual understanding throughout the chain of command. The exercise of command requires timely and effective decision-making, based on initiative and creativity. It further requires a common understanding and shared rules governing the action; there come through doctrine and training. Freedom of action requires decentralisation – and thus cooperation rather than coordination – which needs to go lower and lower as the circumstances become more uncertain and more fluid. Responsibility must truly be delegated and while, exceptionally, it may be legitimate for orders to be given two levels down, this procedure is liable to undermine confidence in the chain of command. Immediate gains resulting from this process may result in a loss of morale, trust and cohesion. This phenomenon was recognised by Moltke, who wrote:

> "The advantage which a commander thinks he can gain through continued personal intervention is largely illusory. By engaging in it, he assumes a task that really belongs to others, whose effectiveness he thus destroys. He also multiplies his own tasks to a point where he can no longer fulfil them all."

From the British point of view, mutual trust is fundamental to the success of Mission Command. But trust cannot be demanded; it is founded on merit and characteristics and built on example. It is also based on a shared perception of the solutions to military problems, in other words, on a common doctrine and philosophy of command, which give rise to an indispensable predictability of behaviour and reactions.

Recalling his experience of the 14th Army, Field Marshal Slim noted the interest of an operational command based on the principles of Mission Command.

> "Commanders at all levels had to act more on their own; they were given greater latitude to work out their own plans to achieve what they knew was the Army Commander's intention. In time they developed to a marked degree a flexibility of mind and a firmness of decision that enabled them to act swiftly to take advantage of sudden information or changing circumstances without reference to their superiors… [This] requires in the higher command a corresponding flexibility of mind, confidence in subordinates, and the power to make its intentions clear through the force." [1]

1. Field Marshal Sir William Slim. Defeat Into Victory, London, Cassell, 1956, pp. 541-542. Slim (1891-1970) is considered one of the best senior British commanders of the Second World War; part of his skill lay in his ability to guide and inspire both command and the troops.

A widespread model

The Israeli Defence Force, with its clear commando origins, has also developed a command style based on principles very similar to Mission Command. This method is known as *balagan meurgen*, meaning 'organised chaos'. The constant search for a surprise effect is reinforced by extensive decentralisation and an emphasis on the inventive exploitation of circumstances. For this army, dealing with the Intifada and the fight against terrorism, the continuously changing nature of combat demands great adaptability and constant creativity with regard to procedures and modes of operation. It is interesting to note, however, that, once the action has started, the commander retains the possibility of "optional command", allowing him to intervene in the actions of his subordinates.

In the US Marine Corps, command is based on "accepting uncertainty as an undeniable fact and being able to operate effectively despite it [...] requires us to decentralize and rely on low-level initiative." [1] The text on which the organisation of this command is based naturally follows this general philosophy: "To best cope with the uncertainty, disorder, and fluidity of combat, command and control must be decentralized. That is, subordinate commanders must make decisions on their own initiative, based on their understanding of their senior's intent, rather than passing information up the chain of command and waiting for the decision to be passed on." [2] Thus, the Marine Corps incorporates the philosophy of Mission Command, with its command style being officially based on the principle of the "disorder and uncertainty in war". Its declared objective is not so much to increase the level of certainty through control and intelligence, but rather to reduce the level of certainty needed to operate effectively. Unity of effort is not sought through conformity and the use of detailed instructions but, on the contrary, through the spontaneous cooperation of all the elements of the force and their knowledge of the requirements of the overall mission. [3] This philosophy is ultimately much more demanding for both commanders and subordinates than a centralised command system; it must be accompanied by a system of training suited to achieving success in modern warfare. At the end of Operation Iraqi Freedom, one of the things noted by the US Marine Corps was indeed the lowering of the effective level of decision-making and thus of initiative, as a principle, but probably also as a result of the speed of the operations as they headed for Baghdad. The Marine Corps Gazette (11/2003) wrote that,

1. US Marine Corps, Command and Control, 1996, p. 104.
2. US Marine Corps, Warfighting, pp.77-78.
3. US Marine Corps, Command and Control, p. 79.

whereas Operation Desert Storm (1991) had been a 'generals' war", because the campaign had been orchestrated from high-level headquarters, the operation in 2003 should be seen as a 'colonels' war", since, once the overall mission had been defined, the various actions were planned and executed on the terrain by regimental and battalion commanders. In his recollection of Iraqi Freedom, General Scales said that, what had particularly impressed him in this conflict "was the ability of soldiers and marines to cobble together ad-hoc units to meet unforeseen circumstances and for even the smallest units to be creative tactically and to act against the enemy without seeking permission." In his view, "the requirement for initiative and leadership have now moved down to the lowest levels of command, which has enormous implications for how junior officers and NCOs are recruited, trained, and selected." [1]

Encouraging initiative

In terms of the organisation of command, delegation and subsidiarity, which open up perspectives for initiative, are also essential tools for managing uncertainty. Thus, at the present time, when new information systems both facilitate and hamper decision-making, one must take care that technology is not allowed to spread its tentacles to increase the intervention by higher echelons, or to limit creativity or freedom of action. Command, however modern, should neither restrain nor hinder; it should bring together all elements to create the conditions needed for the convergence of efforts and initiative, whereby higher authority is to be seen as one of the elements – or even the driving force – of a complex network of interdependent influences and delegated decisions, rather than as the sole repository of authority. The aim of command is not strict control – that would be illusory and counter-productive – but rather to facilitate the effectiveness of each participant in the pursuit of the overall mission. Just like two centuries ago, we must apply the Napoleonic precept that "the commander-in-chief should only indicate the general direction and the aims to be achieved; as to the means by which this should be achieved, these should be left to the free choice of the executive bodies, or success will be impossible." [2] *The recipe for effectiveness is centralised planning and decentralised execution, centralised cohesion and decentralised initiative.*

1. Williamson Murray and Robert Scales, The Iraq War, Harvard University Press, 2004, Cambridge & London, pp. 249-250.
2. Quoted by Ferdinand Foch, *De la conduite de la guerre,* p. 165. [On the Conduct of War]

This is one of the important conclusions reached by Eliot A. Cohen and John Gooch in their excellent book which, under the title "Military Misfortunes", offers an "anatomy of failure in war",[1] with numerous concrete examples. For these two historians, the strengths and weaknesses of the men on the front line are not the determining factor; the organisational weaknesses of the overall command system are the only aspects that can be blamed when failure is due to an inability to adapt. As a rule, the fault lies with centralisation together with the difficulties in adjusting encountered by the units that are actually part of the events. Centralisation is simply incompatible with the inherently complex nature of war. The increasing speed and spread of actions serve only to reinforce this. Too many events are happening too fast, with too much information being available at the same time, for the modern commander to have any hope of being able to take all of the very numerous, yet essential, decisions himself. Centralisation also physically slows down execution because of the delays caused by the transmission of information and the dissemination of the decision along the line; thus it slows down the system's ability to adapt to changes in the environment. Drawing conclusions from his remarkable study of the development of command systems, the American historian Martin Van Creveld observed that, "The fact that the most effective armies were those that did not try to control everything from above, but rather gave a great degree of latitude to their subordinate commanders, has been clearly demonstrated by history."[2]

The new conditions for the employment of forces, the asymmetric engagements, do not change anything; on the contrary. After a year commanding Operation Licorne in Côte d'Ivoire, the French general Elrick Irastorza recalled the importance of formal discipline, while at the same time attaching equal importance to the "freedom of action the officers and NCOs need to exercise their responsibilities; an order must be carried out with the knowledge of the situation required by the operational context."[3] The Chief of the French Army Staff, General Bruno Cuche, stated clearly at the Ecole Militaire on 19 October 2006 that: "In a complex environment war is won by initiatives in the field."

The only path to *a spirit of enterprise, to initiative, to adaptability and to risk-taking is through decentralisation, subsidiarity, empowerment, and harmonised and tolerant trust*. Once the overall means to ensure cohesion have been established at the higher level, the only clear path to success in war is *indirect command*.

1. Cohen and Gooch, pp. 161-163.
2. Martin Van Creveld, p. 270.
3. End of mission report, June 2006.

Success through decentralisation and subsidiarity

GOOSE GREEN (1982)

The Falklands conflict offers a concrete example of two opposing styles of command, at least if one is to believe Spencer Fitz-Gibbon and his book "Not mentioned in Despatches – The History and Mythology of the Battle of Goose Green" (Cambridge, 1995). A military historian, Fitz-Gibbon was an officer in the Parachute Regiment, which received the order to capture the village of Goose Green on 28 and 29 May 1982. In his account, he contrasts the style of the commander of the 2nd battalion – Lieutenant Colonel 'H' Jones, who died honourably while trying to regain the initiative with a head-on attack – and his second in command – Major Chris Keeble, who took his place and won the battle.

According to Fitz-Gibbon, 'H' had an authoritarian style of command, personifying the rigid and centralised tradition that characterised the British forces until the beginning of the 1980s. 'H' endeavoured to control everything personally; for this attack he had devised a detailed plan, comprising six phases, setting out in minute detail the actions of his captains. This rigid plan ran into difficulties at the first contact, which, according to Fitz-Gibbon, was inevitable; very rapidly the subordinate units were quite disoriented, "despite the very detailed initial orders, complete firepower superiority and the absence of losses or entanglement with the enemy" 'H's restrictive command style prevented his subordinate commanders from responding by using their initiative, even when the attack became bogged down. Faced with an impasse, 'H' joined the elements leading the attack in order to take personal command of the assault; he rapidly found himself surrounded by the enemy, but even in this difficult position he resisted all attempts by his subordinates to change the attack plan; his response was: "Don't try to tell me how to fight my battle!" The worst thing was that, as long as the Argentineans managed to keep 'H' under fire, the whole manoeuvre of 2nd battalion was paralysed. The centralised command culture left the subordinates unable to adapt to the circumstances, even though they had a much clearer view of the situation than 'H', caught in the direct fire.

According to Fitz-Gibbon, it was 'H's death on Darwin Hill that finally allowed his subordinates to seize the initiative from the Argentineans. By a fortunate coincidence, 'H's second-in-command, Major Chris Keeble, had been seconded to the *Bundeswehr* for two years, where he had seen how *Auftragstaktik* is applied. At Goose Green, this command style immediately proved itself to be much more effective than 'H's centralised style. Keeble changed the thrust of the attack and delegated responsibility to the best-placed company commander. He then made use of the opportunity offered by the brief withdrawal by the Argentineans, something that 'H', being far too cautious and methodical, would probably not have attempted.

Fitz-Gibbon believes, in fact, that the primary cause of the Argentinean defeat at Goose Green was the shortcomings of their own system. Even more than 'H', the Argentinean commanders were the victims of their inflexible, exacting system, which rendered them incapable of launching any counter-attack, while the British did so on numerous occasions.

The cohesion of initiatives through culture and trust

The controlled autonomy of the subordinate is emerging ever more strongly as the condition which determines the ability to adapt in the face of uncertainty. To this end, care should be taken that orders do not restrict the room for initiative; on the contrary, they should simply set out the framework, the spirit and the general objective of the mission, without going into detail. They may also include some instructions relating to how the mission is to be executed.

However, while this process ensures the ability to respond rapidly by adapting – the main objective – it is important that individual initiatives do not ultimately result in disorder and so jeopardise the effectiveness of the action. It is therefore essential to ensure the unity of the initiatives leading to the predetermined aim; here we see the importance of a "common philosophy", the only means of preserving overall cohesion among the welcome profusion of individual initiatives. For this reason a common culture and a common doctrine should be established in peacetime, so that all those involved share the same principles and the same values.

"Unity of vision, activity, initiative, trust and solidarity": this idea of the fusion of individual action through a common culture and underlying trust was also one of Foch's obsessions. He believed that, "for there to be a whole there must be understanding; only unity of vision is able to guarantee the convergence of effort in the execution." In his view, unity of doctrine – which, by "eliminating all preconceived ideas" [1], should avoid confusing the principle and the procedures – was of prime importance for the success of the collective action. It was the "beacon lit on the storm-battered coast to guide the uncertain sailor", with which he opened the first edition of 'Principles'.

The command procedures used by General Leclerc during the Second World War illustrate how a common vision contributes to cohesion and thus to effectiveness. Starting with a brief outline of the mission, he gave his subordinates a great degree of freedom to adapt to the event, to the unforeseen and to friction. He approved,

1. Ferdinand Foch, *De la conduite de la guerre,* pp.150, 309, 400. [On the Conduct of War]

coordinated and, where necessary, corrected the initiatives which in most cases were, of course, fully in line with the general intention. Leclerc's approach thus fostered a common will, culture and doctrine, allowing the convergence of subordinates' initiative to take control of the reality of war. Nowadays, in times of dispersed dispositions and manoeuvres in constricted environments, this doctrine is becoming established as one of the pillars of the principle of unity of operational action, the "principle of unity which exists in the thinking and mental processes common to all actors, both the decision-makers and the executors." [1]

A doctrine for intuition

The constant acceleration of the tempo of operations adds a new dimension to doctrine. Increasingly faced with a situation requiring a quick decision, but without the time to gather all the relevant information or to consider his options in depth, the operational commander will frequently have to rely on his intuition when making a decision.

However, far from being based purely on chance, fortunate intuition is founded on a combination of experience and knowledge. "Genius is no more than recollection," said Napoleon, while Foch believed that, ultimately, "in war it is primarily a question of automatically and unconsciously implementing truths", truths that should have become "inherent and integral" to the decision-maker. [2] Admiral Labouérie remarked that, "While Bonaparte's Italian campaigns are always presented as a triumph of improvisation, they owe almost everything to the two years of work at the Ecole Militaire, under the direction of Carnot. This in no way negates the tactical genius of the future emperor, but rather confirms the importance of preparation." [3] Intuition is the product of an immediate amalgamation of knowledge; it is also instinct forged by experience and training, combined with doctrine absorbed to such an extent that it subconsciously underlies the initiative that maintains the overall cohesion. The only solution is to accept it. Since Napoleon already remarked that, "many of the decisions faced by the commander-in-chief resemble mathematical problems worthy of the gifts of a Newton or an Euler", the commander-in-chief will have to trust in his instinctive ability to synthesize. The ability to improvise and to adjust one's action to the situation in order to meet the immediate needs without requiring lengthy preparation,

1. Poirier, *Stratégie théorique* III, p. 17. [Theoretical strategy]
2. Ferdinand Foch, *Des principes de la guerre,* p109. [On the Principles of War]
3. Labouérie, p. 196.

is essential to the operational commander; this is particularly true in modern, mobile warfare, where action and reaction follow each other rapidly and without interruption. However, this ability demands just as much assimilated knowledge and experience as it does intelligence and creativity. The capacity for intuition is quite fundamental, as John Masters reflected:

> "The higher [the commander] stands the more he needs, too, another quality which cannot be taught by any quick means but is either there, by a stroke of genetic chance, or more usually, is deposited cell by cell on the subconscious during long years of study and practice. It is this quality which tells a commander, instantly and without cerebration, whether a plan is inherently sound or unsound. It is also this quality that enables him to receive the advice of specialists and experts, and reach the proper decision though the specialists disagree; and, on other occasions, to overrule them even when they speak with one voice." [1]

Thus, both during the preparation of the action and in the heat of it, intuition complements the rational when it comes to decision-making, with a sound instinct being imbued with doctrine and experience. This instinct represents the element of blind trust that the subordinate will have to accept if he is to follow an order which can never be explained purely rationally.

A doctrine for trust

With the help of a shared culture, trust built up during peacetime can later prove to be a key factor in coherence. Trust between superiors, equals and subordinates is a prerequisite for constructive cooperation; it facilitates the taking of initiative by subordinates and respect for these initiatives at higher levels. However, intuitive command and communication based on trust require a common thinking and constant implementation (the bases of predictability), to ensure that each individual player can improvise – just like in a basketball team or a jazz band – without destroying the cohesion of the whole. In order to avoid falling into their trap, it is important to be aware of certain devastating consequences that may arise from the, otherwise generally positive, role of new information technology, as described above. The new flexibility of dispositions means that there will be frequent changes of subordination, personal relationships will be confined to the executive cell, and a subordinate will

1. John Masters, The Road Past Mandalay, London, Michael Joseph, 1961, pp. 207-208.

frequently only be under the orders of his usual commander for a very brief period. Nevertheless, the importance of the strength of psychological bonds will increase as the small units are dispersed, so such cohesion will have to be even more firmly founded on shared knowledge, applied procedures and a common tactical culture. It will be necessary to develop mutual trust extending beyond the conventional operational circles, to strengthen common training and to emphasise the importance of common doctrine, as it will replace yesterday's familiarity with all those involved.

In his book *De l'action* [On action], Admiral Labourie quotes the decision taken by Captain Vian, in late May 1941, during his pursuit of the Bismarck, the flagship of the German fleet, which had ventured into the North Atlantic. "Leaving the protection of the convoy he was escorting, and without waiting for detailed orders, he set off with his destroyers as soon as he received the rallying cry of "general chase" from the British Admiralty. He thus illustrates the intense unity of British officers following the aims of their Navy in the service of higher national interests and how well those in charge know their subordinates. Indeed, when Churchill asked for news of this force and of its commander, who had not been given the difficult order to leave his convoy undefended and take part in the final chase, the Admiralty replied 'Vian is commanding. He is bound to have gone already.' Vian trusted the Royal Navy; he had confidence in its directives and in the fact that at the appropriate time the logistics would be available, without the need for multiple messages to be sent." This tale is reminiscent of the colonialists, heading off into the unknown with limited resources and no links to their homeland. Armed with a few general instructions, they nevertheless managed to complete their mission, guided primarily by the political intention and the spirit with which they had been imbued. It also recalls the words of General Grant during the campaign which culminated in the victory at Vicksburg in 1863. Finding himself in a difficult position, he knew he would have to rely on General Sherman's forces, even though he had lost contact with them. His faith in the common thinking that surrounded them caused him not to abandon his trust. He recalled the incident in his memoirs: "I didn't know where Sherman was, but I knew that if he could, he would set off swiftly in my direction." That was exactly what happened.

The ambiguity of doctrine

At this juncture it is perhaps worth raising the ambiguous nature of doctrine. Although indispensable to the overall cohesion of individual actions, it may nevertheless prove an obstacle to the capacity for initiative,

and thus to adaptation if it fails to recognise the nature of warfighting, and "attempts to impose on it a set of rules whose fixed character renders it arbitrary."[1] The transition from theory to the reality of conflict, mixing the known and the unknown, immediately comes up against both human nature and the environment, in other words, against the nature of war. While doctrine is content to remain a set of general principles intended to guide the action, it will serve to increase effectiveness. However, if it is more prescriptive than inspirational, or if it is weighed down by overly detailed directives founded on dogma and lists of procedures, the effect of doctrine is to curb initiative, paralyse reaction and weaken creativity in the face of the unforeseen, unable to respond to its myriad forms. Furthermore, in attempting to predict and regulate every aspect, it becomes the clearest way for an opponent to prepare himself for action. It is for precisely this reason that in Western military thinking the very notion of doctrine has long been considered as negative, albeit wrongly. In the restricted sense of the Cold War years, "doctrine" referred to the doctrine of employment of forces of the Warsaw Pact countries. Well known to the West and applied strictly by executives deprived of all right of initiative, doctrine transformed the deployments of Warsaw Pact forces into large troop migrations, that were as regulated as they were predictable. The wars – actual rather than hypothetical – between Israel and Egypt, whose modes of reasoning, functioning and military action were derived directly from Soviet models, are a clear illustration of the contrast between the cult of the initiative and stultifying doctrine. Such doctrine, which according to Guibert[2], "leads to abuse and error because it does not know how to deviate to take account of circumstances" and immobilises both man and manoeuvre, must be rejected in favour of doctrine which, *in contrast, unites without paralysing by basing the effectiveness of the whole on the principle of individual freedom.*

Good doctrine refrains from offering theoretical solutions and is aware, as is Guibert, that "textbook dispositions" will always have to give way to "ad-hoc dispositions". Doctrine should be expressed concisely; its role is simply to present the realm of the possible and the desirable, while still allowing the diversity of conduct and wealth of procedures needed to keep the opponent in a state of uncertainty. Doctrine establishes the overall rules of the game, rather than determining in detail how it will be played. It makes it easier to adapt to circumstances, but is not a substitute for such adaptation. General Marshall observed that: "The problems of combat could not be solved by standard solutions;

1. De Gaulle, *Le fil de l'épée,* p. 157. [The Edge of the Sword]
2. Guibert, *Ecrits militaires* [Military Writings]

every situation encountered in war had every reason to be exceptional and those trying to fight systematically were heading for disaster." [1] Official British military thinking resolves the doctrine dilemma by stipulating that "*doctrine must permit deviation.* Dogma – the resort of the idle and unimaginative mind – is anathema." The British believe that: "Doctrine is promulgated for guidance only, not for slavish adherence. An intelligent and talented commander faced with unique circumstances will always be better placed than the writer of doctrine to assess the most appropriate ways of achieving his objective. The recognition of this leads to a pragmatic attitude that eschews the formulaic and the prescriptive in favour of the unpredictable and surprising. This combination of flexibility and pragmatism is absolutely essential for the successful conduct of the modern range of military operations. It is reflected in British doctrine by the simple expedient of avoiding obligatory prescriptive rules while encouraging a distinctive way of thinking about military operations." [2]

In "Unrestricted Warfare", Qiao Liang and Wang Xiangsui cite a clear example of the ambiguity of doctrine drawn from the Seven Years War (1756-1763). According to these two Chinese authors, the aggressor used the "oblique attack formation" in the two successive battles of Rossbach – in 1757, where Frederick II of Prussia defeated the Franco-Austrian troops commanded by the Marchal de Soubise – and Lucerne, but with very different results. At Rossbach, Soubise applied the historical model. In full view of Frederick the Great, he positioned his troops so that they could attack the Prussians on their left flank but, having observed the manoeuvre, the Prussians redeployed and gained an easy victory. A year later, at Lucerne, Frederick again encountered the Austrian Army, three times the size of his own. On this occasion he was the one using the oblique formation, but with such skill that he totally crushed the Austrian Army. Thus the same method produced contrasting results, thereby demonstrating to the Chinese strategists that, "there is no universally correct strategy [...] that a correct rule can in no way guarantee victory, as the secret of success lies in the correct application of the rules." [3] Doctrine can only lead to success if it reflects what Foch referred to as "a set of fixed principles to be applied in a variable manner according to the circumstances."

It is, therefore, important to ensure familiarity with doctrine and encourage deviation.

1. Quoted by Gorman, p. I-30.
2. British Defence Doctrine, JDCC, Shrivenham, UK, October 2001, p.3-9.
3. Qiao Liang and Wang Xiangsui, *La guerre sans limites,* Bibliothèque Rivage, Paris, 2003, p. 245. [Unrestricted Warfare],

From ambiguity to effectiveness

This apparent contradiction between the inescapable need for doctrine and the need to preserve the creativity required to manage uncertainty has always fascinated the practitioners of the military art. Clausewitz concluded that the essential aim of doctrine is to step aside to make room for the creative instinct. Theory is useful, but in his view its prime function is educational: "It is a means to educate the mind of the future commander or, to guide him in his self education, not to accompany him to the battlefield." [1] For Foch, it was important "to understand the truths", since, in his view, the military art was more concerned with creation, than with imitation or application. The key factor is the ability to adapt to the event ("to act according to circumstances" [2]), which is not taught by scientific theory. "Between the two terms – scientific design and the art of command – there exists a gulf [...] In war facts have precedence over ideas, actions over words and execution over theory." Theory gives way to circumstances: "In war there are only individual cases; everything is a particular case; nothing is repeated." [3] Thus "the prejudices, the preventions, the fixed ideas, the opinions accepted without discussion should all be banned." The only prerequisite is to have "a trained judgement: a single criterion, reason. [...] to apply fixed principles in a variable manner, according to the circumstances." In Foch's view, the art of the commander is the definition of the paths – or the procedures – that serve as the link between the permanent principles and a constantly evolving environment. Naturally, Foch also rejects the notion of "the science of war or of a firm dogma, a batch of intangible truths outside which there is only heresy." The genius of this pragmatic individual, who offers a balance between rationalism and empiricism, lies in his ability to reconcile the permanent principles of war with its ever-changing conditions, and to affirm the need for intellectual freedom from the shackles of preconceived theories. Having rejected dogmatism, rehabilitated judgement and gone beyond simply repeating principles established earlier, he has condensed the art of war into a single lesson: "Learn to think." [4]

For his part, General de Gaulle wrote very little on the science of war, which he implicitly condemned in the very first line of "The Edge

1. Carl von Clausewitz, On War, II, 2, p. 141.
2. Gouvion Saint-Cyr, quoted by Ferdinand Foch, *Des principes de la guerre*, p. 442. [On the Principles of War]
3. Quoted by Jean Autin, Foch, p.64.
4. The last eight quotations from Foch are taken from *Des principes de la* guerre pp. 94 to 110. [On the Principles of War],

of the Sword": "The action of war is essentially that of contingency". Nevertheless, like Foch, De Gaulle is much more interested in the *ability to judge*, rather than the certainty of principles which have the disadvantage of altering the ability to judge and to adapt. Thus, much more than science and technology, for De Gaulle it is education that is key. His priority is to give future leaders "the capacity for deductive reasoning" [1], "the habit of general ideas, the notion of mutual relationships between things which shed light on the highest degrees of the action" and the ability to take decisions which are not decisions "of detail at the expense of the whole" [2]. In particular, he rejects "the excess of technology which obscures the view of the whole" [3] and, again like Foch, rejects "classroom doctrines" [4]. As he famously put it: "The true school of command is therefore general culture." [5] Nevertheless, De Gaulle does recognise the existence of rare fundamental principles ("economy of forces... concentration... surprise... safety"), but believes that they stem more from common sense and are only of relative value, depending on "the way in which they are adapted to fit the circumstances". Thus it is this "appreciation of the circumstances", much more than theoretical and technical knowledge, which forms the "essential" value of the commander. He deplores the idiosyncrasy of the French Cartesian spirit "as demonstrated particularly by its marked taste for abstract ideas and the system, its cult of the absolute and the categorical". He further regrets seeing "military intellect constructing doctrines ahead of action and wanting to impose on such action the absolute conclusions drawn from abstract notions, in spite of possible changes in circumstances", while "refusing to recognise the essentially empirical nature of warfare." [6] He is thus clearly denouncing the persistence of a French military culture based essentially on doctrine and regulation, with a clear taste for the scientific approach and calculated precision. In his view, war is concerned first and foremost not with the application of rules, but with *creation*, since it comprises "the instinct of situations" [7] and "the ability to free oneself, in new circumstances, from the principles accepted thus far." [8] He therefore sees it quite evidently as an art

1. De Gaulle, *Le fil de l'épée,* p. 155 [The Edge of the Sword]
2. Charles de Gaulle, *La France et son armée,* p. 430. [France and its Army]
3. Ibid., p. 429.
4. De Gaulle, *Le fil de l'épée,* p. 155. [The Edge of the Sword]
5. Charles de Gaulle, *Vers l'armée de métier,* p. 322. [Towards a Professional Army]
6. The last six quotations from Charles de Gaulle are taken from *Le fil de l'épée,* pp. 197, 202. [The Edge of the Sword]
7. Charles de Gaulle, *La France et son armée,* p 408. [France and its Army]
8. Ibid., p. 386.

and *recognises a single major principle*, the **ability to adapt to circumstances**, since it is according to such circumstances – which must be seized, understood and then exploited – that one must act in war:

> "To be able to seize opportunities and counter surprises: [...] to remain constantly in a disposition which allows all means to be implemented in the most favourable conditions [...] To remain capable of acting according to the circumstances: open, prepared, informed." [1]

The lessons of these great masters – Clausewitz, Foch, De Gaulle – still hold true today, perhaps even more than in the past. It is precisely because it gives the operational commander the ability to adapt to the circumstances, and so to deviate from the rule that doctrine retains its legitimacy and its effectiveness. In spite of possible ambiguity, it thus becomes an indispensable source of operational effectiveness.

This principle of adaptation becomes even more interesting in the light of the characteristics of the most likely future opponent, who, in the face of excess conventional dissymmetry, has, of necessity, become asymmetric. Asymmetry naturally increases the effect of uncertainty since, for the other side, it is a case of continuously devising new tactics, with the aim of causing a surprise effect by exploiting the weaknesses revealed. In other words, when confronted with the constantly changing nature of the opponent, doctrine is unable to predict either his conduct or the form of the next asymmetric combat. In contrast, it has to ensure the best creative use of our own asymmetric advantages, to set itself the goal of establishing favourable conditions allowing us to adapt rapidly and to impose the need to learn more quickly from experience than the adversary.

Qualities to be developed prior to action

Intelligence, planning and the simplicity of organisations contribute to the success of collective action; such success must be prepared well ahead of any action. A hastily-assembled band of mercenaries would be incapable of dealing with adversity and uncertainty: the ability to adapt to events, and other relevant capabilities, must be prepared in advance of the action. Over a century ago, Foch observed that: "It is the peacetime organisations and preparation which are decisive in the devastating encounters of our immense armies." It is in peacetime that an army must shape characters and attitudes if it wishes to be able to respond to

1. De Gaulle, *Le fil de l'épée,* pp. 197, 202. [The Edge of the Sword]

the unexpected and, in the words of Foch, to constitute "an elite which, once carefully trained, can be safely left to its own free initiative." [1]

Furthermore, although while preparing for action, the commander is naturally able to envisage measures enabling him to withstand unexpected blows and to grasp opportunities, once the action starts he will still need to demonstrate the character needed to take control of the situation. This ability to command at the heart of the event must be based on both intellectual qualities – flexible attitude, analytical capability, understanding of situations, spirit of initiative – and moral qualities – willingness to take risks, courage, tenacity – all of which are essential for a military leader. In "The Edge of the Sword", Charles de Gaulle expresses this idea quite brilliantly:

> "The action of war is always contingent. In other words, it always presents itself unexpectedly, is infinitely variable and is always without precedent. This is why, though preparing through reflection, work and study, the action taken by the commander will ultimately depend on his personality. What will be done or not done will emerge, or will not emerge, not from didactic orders but from brains and character." [2]

In short, successful action requires brains and character.

A flexible attitude and a spirit of initiative

In the heat of the action, the situation can change so quickly that the assumptions on which the orders are based are often out-of-date by the time the action is to be undertaken. On encountering the unexpected, the commander will, by definition, have departed from the plan; he will either have to submit and become the plaything of circumstances or use his initiative to get himself once again into a position from which he can control the event. Thus, for every new challenge, the tactician, confronted at every turn by a fluid and volatile situation, will be called on, not to apply tried and tested solutions, but to seek out the hidden question, the new arrangement or the untried combination. When surrounded by uncertainty and ambiguity, the *spirit of initiative*, *creativity* and even *independence of spirit* are, by the very nature of war, essential qualities for a commander. As, indeed, are the ability to *generate and accept* these qualities, and to develop the *culture of innovation* and

1. Ferdinand Foch, *De la conduite de la guerre,* pp. 398 and 399. [On the Conduct of War]
2. Charles de Gaulle, *Le fil de l'épée,* p. 66. [The Edge of the Sword]

autonomy. It is even more important for the decision-maker who is in close contact with the situation since, as Foch remarked more than a century ago, "the senior general has very little influence on the decisive episodes of war." [1]

The ability to use one's initiative must therefore be seen as one of the cardinal qualities of a man of action; it is therefore important to develop his autonomy by the constant application of the principle of subsidiarity, defined so clearly by General Fiévet: "To assume all his responsibilities, but only his responsibilities." [2]

Military effectiveness in combat depends on initiative: the style of command must foster and develop it in peacetime.

The willingness to take risks

Since the decision-maker must reason within the framework of his limited rationality [3], his decisions will never be completely rational; they will be conditioned by the way he incorporates the random into his reasoning. His choices will automatically reflect his psychological profile. Those of a cautious nature will adopt a conservative approach, aiming more at holding on than at achieving, putting off the final decisions until some hypothetical clearer moment. For those of a bold nature, however, uncertainty will be a source of motivation, offering opportunities to be seized. There is only one certainty: the essential role of risk. The rule is quite clear: "It is necessary to take risks and the courage to do so becomes essential where uncertainty reigns." [4] Thus ultimately, the level of the reward depends on the degree of risk accepted. A greater potential advantage is linked to a higher degree of risk. Most great victories result from a high initial level of risk. Foch said: "One cannot do everything, and in trying to do everything and not wanting to risk anything, one is condemned first to impotence, then to defeat. [...] There are many good generals, but they want to see too many things; they want to see everything, keep everything and defend everything; it ends in dispersal, in impotence." [5]

Military history has often shown that taking risks is a prerequisite for success, while the motto of the famous British SAS sums it up even more simply: "Who dares wins".

1. Ferdinand Foch, *De la conduite de la guerre,* p. 75. [On the Conduct of War]
2. Fiévet, p. 172.
3. See Chapter V above.
4. Carl von Clausewitz, The Theory of Combat, pp. 58, 101.
5. Ferdinand Foch, *Des principes de la guerre,* p. 153. [On the Principles of War],

From ancient history…

Calculated risk-taking enabled Hannibal, the renowned Carthaginian general, to win one of the most famous battles of Antiquity. His victory at Cannae started with inequality and risk for the Carthaginian troops, fighting with their backs to the River Aufidus, against a numerically superior enemy (3 to 2). A decisive attack on the flanks and the rear resulted in the annihilation of the army of Terentius Varro. This victory was only possible because Hannibal accepted the risk that his army might be weakened in the centre, which could have caused it to be split in two and defeated. [1]

The success of the Italian campaign (1796) was due to the risks accepted by Bonaparte when faced with numerical inferiority and great uncertainty with regard to the enemy's intentions. Having advanced into Piedmont, and into a delicate position, he decided to keep his troops in a central position, without ensuring either the security of the coastal route, or a solid defence against attacks by Sebottendorf or Argenteau. In this configuration, he was able to concentrate his army entirely on the point under threat, or wherever else he wished to focus his main effort. Although risking the safety of his flanks and his supplies, he was, at the decisive moment, always stronger than his adversary, whereby all other aspects became secondary. Nine years later, the victory at Austerlitz also followed an occasion on which the Emperor initially took a risk. Having, on the eve of the battle, occupied the dominant position at Pratzen, he then left the plateau, thereby allowing the coalition troops to occupy the site and ensuring that, on 2 December 1805, they would fall into the trap he had prepared. [2]

On the other side of the Atlantic, the American Civil War confirmed the role of deliberate risk-taking in the success of armies. The Battle of Vicksburg, one of the most important victories for the North, centred on the risk taken by General Grant in order to take the town from the rear. In March 1863, he decided to avoid the conventional line of attack from the west bank of the Mississippi, in favour of a more innovative manoeuvre: he crossed the river to the south of the town, moved eastwards and, using a wide turning movement through enemy territory, eventually attacked the beleaguered troops from the rear. During the winter of 1864-1865, the victorious push by General Sherman's troops in Georgia and the Carolinas was based on a brilliant strategic vision,

1. Those interested in the Battle of Cannae will find an interesting account in Du Picq's *Études sur le combat,* Chapter III. [Studies of War]

2. See Hubert Camon, *La guerre napoléonienne*, for more detailed information. [Napoleonic War]

but also involved taking considerable risks. Indeed, in order to conduct this bold campaign against the Confederates, Sherman took the risk of operating in enemy territory, with all his lines of communication cut off. Having drastically reduced his combat logistics, he operated with his four corps on the east of the Mississippi, with no supplies other than what he could find along the route.

In the First World War, in August 1914, facing two Russian armies on the Eastern Front, and in a position of severe numerical inferiority, General Hindenburg took the risk of leaving only a thin line of troops to the north to confront the army commanded by Rennenkampf. He chose to concentrate his efforts further south against the army commanded by Samsonov, which he destroyed at the battle of Tannenberg, taking 100,000 prisoners! Turning again to the north, having regrouped his forces, in September he crushed Rennenkampf's army at the First Battle of the Masurian Lakes.

In August 1939, at the start of the Second World War, the Polish, rather than opting for a defence along the favourable line offered by the Vistula – shorter but leaving the industrial regions open to the enemy – preferred a forward defence, thereby committing what Jomini called "the grave mistake of wanting to cover everything". The line was twice as long; from the outset the Polish forces were enveloped by the German army, which was waiting for them, while the dispersed troops were protecting regional borders. "In wanting to defend everything, you defend nothing", the maxim of Frederick the Great, was forgotten. On the German side, however, the forces were concentrated on the main axis of effort. This concentration was only made possible by the strategic gamble taken by the Germans: the French would not leave the Maginot Line, despite their promises to the Polish. Thus the Germans left a thin line of second-category troops facing the west and grouped the mass of forces to the east. On 1 September, they crossed the border and crushed the Polish army. Poland capitulated less than a month later. A clear victory, but a victory that was made possible, at least partly, by the initial decision to take a risk. For Von Manstein the victory rested on two conditions: "Firstly, that the German Command would accept a high degree of risk in the west in order to generate the superiority needed in the east, and secondly, that the Western powers would in no way exploit this risk by coming to the aid of the Polish in time." [1]

Seven months later, at the breakthrough of Sedan, there was again considerable risk taken with regard to the lines of communication, in the hope that the push would disrupt the French troops to such an extent that

1. Eric von Manstein, *Lost Victories*, Henry Regnery Company, Chicago, USA, 1958, p. 62.

there would be no possibility of isolation. In August 1944, Cobra, the devastating breakthrough in Avranches, was Patton's rejoinder: his gamble, in which he concentrated all his efforts into a dramatic push, without concerning himself about the flanks. The capture of Strasbourg by the 2nd Armoured Division in November 1944 was another major gain achieved by the willingness to take a significant risk: the audacity of the breakthrough at Dabo coupled with General Leclerc's decision to engage his task forces on the narrow, twisty forest roads of the Vosges, despite the possibility of getting blocked in. A 'tit for tat' response, Dabo was a repetition of the manoeuvre in the Ardennes in 1940 and the surprise for the adversary, as well as for the side carrying out the manoeuvre. In his memoirs, General de Langlade recalled his astonishment on hearing his general tell him, "You will be the one in charge of crushing the last shreds when I unleash the division. You must get down to Alsace at a gallop. [...] But don't go via Sarrebourg or Saverne – that will be up to Dio [...] All the major routes are full of obstacles, we'll never get through [...] So you will have to arrange to go that way [...] The enemy will be expecting you on the roads around Savenne, and will not be expecting you to come via Dabo, as no-one would ever imagine that an armoured division would use the mountain route." [1] Lerclerc took a chance, played and won, both Strasbourg and the everlasting recognition of the French!

... to the most contemporary

Iraqi Freedom, spring 2003. Once again "accepted risk" proves to be a decisive factor in the American success. We encounter the spirit of Moltke, who said that: "In war one has to accept great danger if one wants to achieve great success; something must be put at risk if one wants to achieve a real result." [2] The general gamble – a compromise, as we know, between the Secretary of Defense and General Franks, commander-in-chief of the operation – related to the low numbers of land forces. As General Kroesen put it: "We did not have a force in theatre capable of ensuring success in all cases. In the end it all worked out fine, but imagine what might have happened." [3] Speed was intended to

1. Langlade de, *En suivant Leclerc,* Paris, 1964. [Following Leclerc]
2. Helmut von Moltke, On the Art of War, Selected Writings, pp. 219, 243.
3. More than three years later, history has not yet finally been written, but it is already possible to put this comment into perspective. While the tactical victory of the capture of Baghdad was both brilliant and dramatic, what happened thereafter certainly did not go as well. This has naturally led to questions regarding the value of a tactical victory in conditions which make it impossible to achieve a strategic success, and explains the questions raised regarding the contempt shown by the political authorities for the advice and experience of the military during the planning of this campaign.

compensate for numbers: the gamble paid off, removing one of Saddam's options and disrupting his plans. Another American general picks up the story: "We manoeuvred quicker than they could react." Prior to this overall gamble, the first operational risk involved extending the lines of communication between Kuwait and the Karbala Pass, the low level of security, and the lack of reserves. On 5 May 2003, in the National Review, Victor Hanson commented on this accepted risk: "The length and the vulnerability of the lines of communication made it possible to advance rapidly to Baghdad and to retain the capacity to act in spite of the growing anti-war movement." At a time when the southern zone was far from being secured, and combat was raging in the towns, the second risk was continuing on to Baghdad without reinforcements, following the Karbala breakthrough, and once again gambling on speed being able to upset the enemy and prevent him from re-establishing the cohesion of his defences. The third risk was to take Baghdad without a break, again without reinforcements, with success for the Army thanks to two armoured raids, and for the Marines Corps to pushing forward to the centre of the city without keeping to the envelopment plan.

The capture of Baghdad, April 2003: while the decision to take the city was a risk, the success of the operation also resulted from a serious instance of risk-taking. This operation, carried out with fewer than 1,000 men and 100 armoured vehicles from the 3rd Infantry Division, and with only very few casualties, gave a false impression of the ease with which it was executed. Initially, the American plan envisaged a siege, followed by an attack to be carried out by the Airborne Division. Taking advantage of the inability of the Iraqi Command to respond to the high speed of the offensive, the commander of the 3rd Division, General Blount, ordered his 2nd Brigade to carry out a raid on the city to test and disorganise the defences, gather intelligence on the Iraqi forces and inflict the maximum number of losses before the start of the siege. Colonel Perkins, commanding the 2nd Brigade, opted to take a risk: working on the premise that a spectacular capture of the decision centres of the regime would preclude any coordinated response, he sent armoured columns to the city centre, without securing the flanks or the rear areas… On 5 April, a battle group (30 tanks, 14 personnel carriers) set off to carry out a raid, travelling around fifteen kilometres on Highway 8 in the southwestern suburbs to link up with the 1st Brigade, which had just taken the airport. The enemy response was more vigorous than expected. Whereas the Iraqi army and the Republican Guard offered virtually no defence, the Fedayeen and Islamist volunteers almost succeeded in blocking the American columns by suicide attacks.

However, on 6 April, an analysis of the raid concluded that it had been an appropriate mode of action: one tank destroyed, a number of personnel carriers damaged, around 1,000 enemy dead, no structured defence by the Iraqi but only attacks by fanatics armed with light weapons. General Blount thus ordered a second raid involving the whole 2nd Brigade. At his suggestion Colonel Perkins was authorised to keep his battalions in the city, in order to exploit fully the psychological aspect of seizing symbolic objects, such as Saddam Hussein's palace, the headquarters of the Ba'ath Party, the 14th of July Bridge and the Hotel Rachid. Indeed, to have evacuated these objects immediately after having seized them would have portrayed a disastrous image in the media. However, once they had reached the areas in the city they were heading, the American columns were immediately surrounded: the Iraqis charged using cars, trucks and even buses filled with explosives. The brigade headquarters had to defend itself, with a number of its vehicles even being destroyed by missiles. After ten hours of uninterrupted fighting the brigade found itself running out of fuel and ammunition. Colonel Perkins had to make a difficult decision: either to withdraw his battalions while they were still capable of breaking out, or to send in supply vehicles, with no escort, along routes held by the enemy. He opted for the latter solution. This was the more risky and probably the more costly in terms of human life, but it may have avoided a siege situation and also shortened the length of the war. A convoy of six fuel tankers and eight munitions trucks attempted to force their way through. By good fortune, only two tankers and three munitions trucks were hit and destroyed, with the rest managing to get through under fire and bring supplies to the isolated battalions. On the night of 7/8 April, and during the following two days, the suicide attacks doubled, without really affecting the units of the 2nd Brigade. On 9 April the regime collapsed. [1]

In a general analysis of the Iraqi Freedom campaign, General Scales wrote: "Franks and his immediate subordinate commanders, McKiernan, Conway, and Wallace, encouraged their officers to take risks. Throughout the campaign the Coalition focused on getting to Baghdad as fast as possible, even if it caused some dislocations in the logistic flow. Subordinates willingly bypassed enemy defences with the assurance that speed, supporting firepower and the competence of follow-on forces would protect rear areas." [2] The overall success of American air-land operations

1. As recounted in *Doctrine no. 3*, (CDEF-Armée de terre), June 2004.
2. Williamson Murray and Robert Scales, The Iraq War, Harvard University Press, 2004, Cambridge & London, p. 245

during this campaign once again seems to confirm the idea put so succinctly by Charles de Gaulle: "The passion for risk is the essence of strategy." [1]

The calculated risk

In contrast to cases where taking a risk leads to success, *the absence of risk is often synonymous with defeat.* One clear example is the landings in Anzio, in January 1944, which were conceived as a means of overturning the defensive position of Monte Cassino and opening up the route to Rome. The initial landing surprised the Germans; 60,000 men and 4,000 vehicles were able to get behind enemy lines. General Lucas, commanding the VI (US) Corps, which had just landed, adopted a cautious approach with regard to any enemy forces that might still be in the zone, waiting for the consolidation of his logistics on the shore before fully exploiting his initial advantage. Taking advantage of this respite, the Germans reinforced their troops and took up positions on the heights overlooking Anzio. They regained the initiative and, although unable to drive the American-British force back into the sea, for several months they managed to halt the Allied advance on Rome. As General Westphal, chief of staff to Kesselring, the German commander-in-chief in Italy, later observed: "The road to Rome was open and a bold, fast-moving column could have entered the city. [The enemy] displayed astounding passivity." [2]

Somewhere between too much and too little risk-taking, Admiral Chester Nimitz, a prestigious figure in the US Navy, personifies the notion of reasonable risk. Following his naval victories in the battles of the Coral Sea and Midway (May/June 1942), and the glory of victory over Japan, which he shared with General MacArthur, the admiral emerges from the Second World War as a master of military art. He was first and foremost pragmatic: conscious of the uncertainties inherent in his vast theatre of operations, he knew he would be unable to win without risk, while at the same time being aware that too great a risk might lead to the loss of everything. Thus, during his campaign in the Pacific his actions were based on the guiding principle of *calculated risk.* He explained this to his major subordinate commanders: "In accomplishing your mission you will be governed by the *principle of calculated risk*, which you shall interpret to mean the avoidance of

1. Charles de Gaulle, *La France et son armée*, p. 408. [France and its army]
2. Quoted by Philippe Masson, *Histoire de l'armée allemande 1939-1945,* p. 275. [History of the German Army1939-1945]

exposure of your force to attack by superior enemy forces without good prospect of inflicting, through this very exposure, greater damage on the enemy." [1] For every plan of action submitted to him, after examining the feasibility in terms of materiel and logistics, he would routinely ask two questions: "What are the chances of success of this operation? What would be the consequences of failure?" [2] This attitude is reminiscent of that of the Supreme Commander in Europe, General Eisenhower, who decided to launch the two major landing operations of the Second World War – Husky, in 1943, in Sicily, and Overlord, a year later in Normandy – despite very unfavourable weather conditions because, all things considered, he believed that the greatest risk lay in postponing them.

It is clear that equipping oneself with the means to win in spite of uncertainty favours risk-taking and thus the chances of victory. The decision to act results from weighing up the hope of success and the fear of the cost of failure. Thus, an actor who has control of the procedures enabling him to improve this balance by reducing the consequences of the unexpected will be more inclined to take a risk, which always involves gambling with uncertainty.

Perseverance and courage

There is one further essential quality for commanders operating in uncertainty. While they need to be able to adapt to the circumstances and to exploit them, they must also display tenacity and perseverance. In the prophetic words of Captain de Gaulle: "There are moments when the will of a handful of free men breaks through determinism." [3]

Clausewitz believed that, in a chaotic and changeable environment, where chance determines the fortunes of war, free will is an essential factor in effectiveness. Firmness – "the gift of keeping calm even under the greatest stress" [4] – and strength of character allow friction to be overcome, while courage – for Clausewitz a characteristic more important than an analytical capability – assists in taking advantage of the situation. Clausewitz, Sun Tzu and Jomini agree on these points, stating: "Where uncertainty lies in one pan of the scales, courage, self-reliance and the ability to maintain serenity must be put into the other to restore

1. Edwin P. Hoyt, How they won the War in the Pacific, p. 94.
2. Ibid., p. 145.
3. Charles de Gaulle, Extract from a history class at Saint-Cyr, attributed to Captain de Gaulle, quoted by Edmond Pognon, *De Gaulle et l'histoire de la France,* p. 290. [De Gaulle and the History of France]
4. Carl von Clausewitz, On War, I: 3, p. 107.

the balance."[1] [...] "If he is courageous, a commander will be able to gain victory by taking advantage of opportunities without hesitation."[2] [...] "The essential qualities for a general will always be as follows: First, a high degree of moral courage, capable of great resolutions. Secondly, a physical courage which takes no account of danger."[3]

Perseverance should make it possible to deal with the wide range of contradictory reports; according to Clausewitz: "A general in time of war is constantly bombarded by reports both true and false, [...] he is exposed to countless impressions, most of them are disturbing, few of them are encouraging."[4] and, in addition, strengthened by moral courage, perseverance enables the commander to *concentrate on the major effort without being distracted by easier marginal success and without sacrificing that which is not essential to that which is essential.* In uncertainty, courage is indispensable to the commander who has to make a decision, in other words, to perform a synthesis of the rational and the random, and select from among the possible future scenarios. The ultimate decision – the transition from thought to action – falls not to a group but to one man, who must decide alone. In cases where the consequences of the decision are momentous (usually a case of life and death) and the "fog" thick, the anxiety caused by the decision may have a paralysing effect – or even bring about moral collapse due to excessive stress. It is therefore crucial that "courage and strength of character be as solid as the rock that resists the beating of the waves, with perseverance in the chosen mode of action constituting an essential counterweight."[5] Clausewitz's thinking is echoed by Moltke, who observed that: "In war, qualities of character weigh more heavily than those of reason, with a firm decision and the resolute execution of a simple idea being the most certain guarantee of victory."[6] This is very close to the "Always keep your objective in mind"[7] of Liddell Hart. However, while courage, "this truly creative force which must be based on sound reflection"[8], is always superior to excess caution, it does not imply frenzied action. *Calculated patience is another indispensable form of moral courage.* As for tenacity, care must be taken to

1. Carl von Clausewitz, On War, I: 1, p. 86.
2. Sun Tzu, The Art of War, p. 65.
3. Jomini, *L'art de la guerre*, I, p. 128. [The Art of War]
4. Carl von Clausewitz, On War, III: 7, p. 193.
5. Carl von Clausewitz, On War, III: 7, p. 193.
6. Helmut von Moltke, On the Art of War, Selected Writings, p. 172.
7. Liddell Hart, Strategy, p. 335.
8. Carl von Clausewitz, On War, III: 6, p. 190.

avoid it becoming obstinacy which is "an intellectual failing, a fault of temperament" [1]. A fine line indeed!

General Wavell retained similar lessons from his vast experience of the fortunes of war. In his view: "The lesson is to integrate into one's reasoning the uncertainties of war and protect oneself against them, but not to be discouraged if they become apparent. It is fascinating to see that if one pursues one action with firmness and common sense, even the greatest shambles will sort itself out." [2]

The two greatest French generals of the First World War are remarkable examples of controlling circumstances and adversity through will and perseverance. This ability to take control seems even to be one of their main characteristics. In spite of the dramatic events and the crushing defeats on the borders in September 1914, General Joffre remained calm, overcame the panic, conducted a withdrawal manoeuvre to await more favourable circumstances and then took advantage of the opportunity given him by the "disobedience of General von Kluck", to launch his victorious Marne offensive, something his successor, General Gamelin, was unable to do in 1940. Many a lesser man would have collapsed, when confronted by the excitation of violence and the proliferation of the unexpected, but General Joffre proved to be the very model of a steady, serene character. In the words of Charles de Gaulle: "It was lucky for France that Joffre, having misjudged the stroke of his sword, did not lose his balance; realising that the only solution was to be found within himself, he cast off theory and set his powerful personality against the event." [3] Consider the order he issued on 6 September 1914, which represents a wealth of French military honour:

> "At the moment when the battle upon which hangs the fate of France is about to begin, all must remember that the time for looking back is past; every effort must be concentrated on attacking and turning back the enemy. Troops that can no longer advance must hold on to the terrain gained at all costs and be killed in situ rather than retreat. No weakness can be tolerated under present conditions."

Marshal Foch, for his part, perfectly fulfils the description of a commander given by Clausewitz: "The commander must trust his judgment and stand like a rock on which the waves break in vain." [4] Foch rigor-

1. Carl von Clausewitz, On War, I: 6, p. 117.
2. Wavell, Speaking Generally, p. 79.
3. Charles de Gaulle, *La France et son armée,* p. 483. [France and its army]
4. Carl von Clausewitz, On War, I: 6, p. 117.

ously applied his own maxim: "To say 'I want' is not enough, one has to live this desire constantly." It was indeed his will and his perseverance, coupled later with those of the "Tiger" (Clemenceau), which kept the struggling French Army, and thus France, going during the darkest hours of the Great War. As the commander of the 9th Army in the area of the Marsh of Saint Gond, he played a crucial role in the first Battle of the Marne. Astonishingly calm and serene, he formed the axis around which the action was structured and whose collapse would have meant disaster. His words have become legendary: "Hard pressed on my right. My left is yielding. Impossible to manoeuvre. Situation excellent. I am attacking." During the race to the coast, it was again the will of General Foch, then spokesman for General Joffre, which prevented any weakness. To the commander of the 2nd Army, who was concerned about the fatigue of the troops who had fought so hard in Lorraine, he retorted: "You are addressing a brick wall… resist and hold are the only acceptable words." To the commander of the 10th Army, General Maud'huy, he spoke in no uncertain terms: "I do not want to hear anything. Do you understand? I am deaf. I only know three ways to fight: attack, resist, clear off. I forbid you to do the last. Choose one of the other two." On 26 March 1918, at the Town Hall in Doulens, the senior commanders met to discuss the need to counter the major offensive which had taken the Germans back to the Compiègne Marches. Foch, now commander-in-chief of the French armed forces, once again used the language he had used in Flanders, offering to discuss only "his persistent will and his boundless confidence": "My plan is not complicated, I want to fight. I will fight outside Amiens, I will fight in Amiens, I will fight behind Amiens, I will fight at all times!" [1] Finally on the subject of courage, Field Marshal Slim offers a clearly unambiguous quotation: "Courage is not merely a virtue; it is 'the' virtue. Without it there are no other virtues. Faith, hope, charity, all the rest don't become virtues until it takes courage to exercise them. Courage is not only the basis of all virtue; it is its expression. True, you may be bad and brave, but you can't be good without being brave. […] I have known many men who had marked physical courage, but lacked moral courage. Some were in high positions, but they failed to be great in themselves because they lacked it." [2]

1. Jean Autin, *Foch*, pp. 129, 140,141 and 221.
2. Field Marshall Sir William Slim, Courage and Other Broadcasts, Cassell, 1957.

Qualities to be preserved and cultivated

Clausewitz knew that these moral qualities – a spirit of initiative, a willingness to take risks, tenacity and courage – were indispensable to a commander. However, he considered them to be rare since they are so often worn down by time and tempered its disappointments. Moreover, rising through the hierarchy tends to develop intellectual qualities at the expense of qualities of character. Where these do persist in the psyche of a senior commander they are all the more remarkable.

> "A distinguished commander without boldness is unthinkable. [...] This quality is the first prerequisite of a great military leader. [...] How much of this quality remains by the time he reaches senior rank, after training and experience has affected and modified it, is another question. [...] The higher the military rank, the greater is the degree to which activity is governed by the mind, by the intellect, by insight. Consequently boldness which is a quality of temperament will tend to be held in check. This explains why it is so rare in the higher ranks, and why it is all the more admirable when found there." [1]

Foch also remarked on the difficulties encountered by military institutions in training commanders. They need to be imbued with *two fundamental qualities, which do not naturally co-exist: discipline and initiative, the former being essential to the cohesion of the action and the latter to the control of the event.* He notes that service in peacetime seems to favour discipline at the expense of initiative and, thus, of adaptability. He wonders how "an eminently methodical and regular service can produce leaders with a spirit of enterprise who are bold, prepared to take risks, so difficult to predict in advance." [2]

The difficulty of selecting commanders is a constant factor in the military. On the other side of the Rhine, over a quarter of a century before the Great War, Von der Goltz observed that: "Those whose nature is deeply engrained generally behave in a manner that, in peacetime, is likely to go against promotion... One is easily persuaded to favour at their expense others whose personalities appeal." [3]

Charles de Gaulle, in turn, noted that: "We go to war with commanders recruited and trained in peacetime. It should be understood

1. Carl von Clausewitz, On War, III: 6, pp. 191, 192.
2. Ferdinand Foch, preface to the first edition of On the Conduct of War, 1904. When Foch wrote these prophetic words, he could clearly not have known that, exactly ten years later, from September to December 1914, General Joffre would dismiss 180 generals, including 3 Army commanders and 33 Army Corps commanders (Frémeaux, p. 88).
3. Von der Goltz, *La nation armée,* pp. 53, 75. [The Nation in Arms]

that this condition does not favour the selection of personalities... Strong personalities, organised to face combat, trials and major events, do not always display the easy advantage and superficial attraction so pleasing in the course of everyday life; the choice which governs careers falls more easily on what is pleasing rather than what is deserving." [1]

It is perhaps General Von der Goltz who best defines the simple principle allowing good wartime commanders to emerge. In his view, to obtain leaders capable of defeating the *uncertainty* and *friction* of war, one should "show indulgence to a gifted officer whose faults are counterbalanced by the results he achieves". [2]

*
* *

> "In short, absolute, so-called mathematical, factors never find a firm basis in military calculations. From the very start there is an interplay of possibilities, probabilities, good luck and bad that weaves its way throughout the length and breath of the tapestry. In the whole range of human activities, war most closely resembles a game of cards." [3]

Clausewitz is clear: the *fog* and the *friction* are not historical artefacts. They stem from the profound nature of war and no technology will be able to eliminate them from the area of confrontation, creating the ideal appearance of a chessboard. [4] As war is a man-made phenomenon, it is subject to all the tensions which render human interaction so unpredictable. This is particularly true nowadays, given the expansion of the field of action and the multiplication of variables which combine to produce an infinite growth in the number of such interactions. War is a terrestrial expression of the chaos – in the scientific sense of the word – that governs the universe. While reflection makes it possible to control some of its material expressions, the commander and his forces still need to learn how to win in an environment of by *uncertainty* and *chance*.

While seeking to reduce uncertainty and unpredictability by technological means, it is equally necessary to accept their inevitability and to develop the best means and methods to control the environment.

1. Charles de Gaulle, *Le Fil de l'épée,* pp. 161, 162. [The Edge of the Sword]
2. Von der Goltz, *La nation armée,* [p. 76.The Nation in Arms]
3. Carl von Clausewitz, On War, I: 1, p. 86.
4. It is perhaps unsurprising to note here that, while Clausewitz often compares war to a game of cards, dominated by chance, Jomini compares it to a game of chess, more structured and with the uncertainties restricted to those of the opponent'swill.

Freedom of action and initiative

THE EXAMPLE OF ARTEMIS

Operation Artemis, the first autonomous operation by the EU, took place at Bunia, in the Ituri region of the Democratic Republic of Congo, from 12 June to 1 September 2003. This operation comprised an intervention in a little-known theatre, in central Africa, with the purpose of putting an end to interethnic conflicts before handing over to a UN intervention force. The Army Staff described it as "an operation conducted deep in an insecure zone and a mission rendered complex by its environment, perilous by the projection involved and the opening-up of the theatre, arduous by its execution and dangerous by its conduct." Nevertheless, Artemis was a "true military and political triumph", with "the *simplicity of its principles* playing a major role in its success". The analysis of the mission given by its French operational commander, General Thonier, is highly enlighteningI; in this operation, which was a *modern textbook example in terms of the level of uncertainty before and during the action, it was the principles described in this book that enabled us to take decisions and to win* in uncertainty. In the words of General Thonier addressing the symposium "The French Army at the dawn of the 21st century", held on 6 April 2004:

> *"The operational orders validated by the Chief of Staff were more a posture and an attitude than modes of operation. There was generous room for manoeuvre, allowing the orders to be adapted to the situation during the course of the action. […] My freedom of action was considerably enhanced by clear and unambiguous rules of engagement, enabling me to take the initiative and to opt for deliberate offensive modes of action, which proved a very effective deterrent. I am today quite convinced that the opportunity offered to the commanders, down to the lowest levels, to use their weapons in a controlled manner was a key factor in the credibility and effectiveness of the force. […] This state of mind, encompassing vigilance, initiative and the ability to respond quickly, undoubtedly also contributed to dissuading the militia from attacking the force directly. […] This ability to use all my resources, without the need to obtain prior authorisation, proved crucial in this operation, where the factual approach and the perception of the actual situation demanded rapid, tailor-made responses, which only the commander "in contact" was able to judge accurately. Another positive aspect was the quality of the men assigned to this operation. Their experience, perfect professionalism and collective motivation enabled me to make bold tactical and logistic choices. […] While a legal framework is essential, it must not act as a straitjacket, reducing the commander's room for manoeuvre to the extent that he becomes vulnerable. It is important – or even indispensable – to ensure all levels have the room for manoeuvre they require. […] This subsidiarity is only possible where commanders know both each other and their subordinates, where there is cohesion among the elementary units and where there exists mutual trust and respect.*

> *From the outset, the Artemis force was able to make its presence felt, thanks to the commander in the field having free rein. He alone was able to decide on the correct modes of action to be adopted in a volatile and complex situation, with the help of appropriate rules of engagement, applied intelligently by experienced men. I think it would be right to say that there is no point in having broad rules of engagement if the commander in the field has no freedom of action or if he has no faith in the men who have to implement them."*

The role of the organisational aspects is evident: to facilitate the flexibility and adaptability of the fighting units. from the influence the style of command, the training of the troops and the sense of community is also clear. In this environment, characterised by the large number of individual decisions that must be taken simultaneously, education, discipline and culture become the instruments most suited to achieving a cohesive whole. *Training prepares for confronting certainty; education allows one to react to uncertainty.* It is *the unity of thought, doctrine and the awareness of higher goals* that enable each individual, each guardian of the right of decision, "to turn to higher levels of logic to guide his action". [1] The indispensable discipline is reinforced by *guidance by the objective*: for the combatant this is the tactical goal, for the tactician the operational goal, for the operational commander the strategic goal and for the strategist the political goal.

In action, only decentralisation and trust in the men allow the optimal expression of operational capacities. Efforts to centralise operations and to exercise full control over the event are contrary to the very nature of war. Its complexity negates the benefits of centralisation.

IX. Exploiting uncertainty

Faced with uncertainty, the initial response is usually reactive. It consists, as we have seen, of following two convergent paths: on the one hand, trying to reduce uncertainty and, on the other, constructing the tools needed for its optimum management. The second response is pro-active: strategists have realised that the positive side of uncertainty and disorder is that they are shared equally. Thus it is a question of making use of them, or even exacerbating them for the enemy, by

1. Dominique Genelot, *Manager dans la complexité,* p. 286. [Management in a Complex World]

inciting – at individual and group level, as well as for the command echelons – doubt, indecision and paralysing anxiety. [1]

The first priority must be to *maintain uncertainty* by keeping secret one's own dispositions, capacities and intentions. It is further important to adopt attitudes likely to *increase the enemy's state of uncertainty*. Finally, one must *destroy the instruments that would allow the other side to reduce and manage uncertainty*.

Thickening the protective fog

The first step is to maintain the greatest possible secrecy concerning one's own capacities and intentions. Since the fortunate disappearance of the scarlet trousers, following the initial carnage of 1914, camouflage has become an automatic reflex for combatants. Used at the lowest level during combat actions, it is also adopted by units, which prefer to move at night rather than by day, implement measures to ensure radio and electronic security, keep troops dispersed, concentrating them only at the last minute, and to make use of urban areas and cover to allow forces and headquarters to 'disappear'.

Although such measures take account of the concern for protection, the primary motivation is to maintain the element of surprise. It is, after all, important to keep the enemy in ignorance not only of one's assets, but also of one's plans. *What must be maintained at all costs is the secret of the undertaking itself, in other words, of the ultimate aim of the action*. While knowledge of the opposing plans obviously makes it possible to construct the best manoeuvre to prevent them being from realised, it also enables one to examine and understand fully the information received. Knowing the aim of the action offers the greatest chance of discovering the procedures, provided there is already some knowledge of the opponent's resources and reasoning.

1. Admiral Guy Labouérie believes that, together with the "lightning effect", the "principle of uncertainty" is the second principle which characterises the general area of the conduct of operations. He defines it thus: "The principle of uncertainty is intended to increase doubt, disquiet, anxiety and fear among combatants, civil and military leaders and also among the population, with the ultimate aim being to destroy the will of the Other, and thus to paralyse him. It takes the form of a permanent concealment, including during action, thereby ensuring that the Other remains unsure of the aim, the time, the place, the force and the form, so that he is unable to prepare and exhausts himself in conjecture, dispersal and hesitation [...] It comprises the implementation of a series of procedures intended to lead successively to doubt, fear, demoralisation, inability to act, hesitation, where possible paralysis and thus, by default, to combat in the best possible conditions", in *Stratégie (reflexions et variations)* [Strategy (variations and reflections)], Addim, 1993, pp 78-80.

In the same way, maintaining secrecy regarding the second echelon forces and, even more so, the reserves is of capital importance. These forces are the clearest indicators of the commander's intentions. Once their secrets have been revealed, a great deal of the uncertainty will be dispelled for the opposing commander, rendering his life considerably easier. For this same reason, it is also important to keep secret the degree of awareness of the opponent's plans and capacities as, naturally, if the opponent becomes convinced that his intentions are known, he will change them, thereby returning to the previous state of uncertainty. Strategists have always considered this need for secrecy regarding intentions, plans and assets to be paramount. Sun Tzu had already grasped the importance of this practice: "By discovering the enemy's dispositions and remaining invisible ourselves, we can keep our forces concentrated, while the enemy's must be divided [1]." In the same vein, twenty-five centuries later, Richard Nixon reported the words spoken to him by Eisenhower, a tactician, strategist and politician: "One must never allow the enemy to know what one will do, but it is even more important never to allow him to guess what one will not do [2]."

Twenty-five centuries earlier, Sun Tzu had stated simply: "Let your plans be dark and impenetrable as night."

Enhancing the enemy's state of uncertainty

To enhance the state of uncertainty means thickening the fog and the ambiguity, in order to sow the seeds of doubt in the minds of the opposing commanders, in particular by increasing the level of friction they are faced. It also means the systematic realisation of the unexpected and the deliberate search for originality. The protection of plans, in conjunction with the methodical realisation of surprise, produces a significant strategic advantage, as recalled by Frederick the Great, who observed that: "What the enemy least expects will achieve the most." For Lucien Poirier: "Military strategy's rule for performance is the persistent search for a surprise which can affect various parameters of the action. Its purpose will be disguised during preparations and its ways-and-means – the forces and the way in which they are employed – will be organised, and will deploy and operate in a manner that anticipates the deception by the enemy." [3] It is important to develop stratagems designed, on the one hand, to plunge the opposing commander into

1. Sun Tzu, The Art of War, Section 10.
2. R. Nixon, *La vraie guerre,* A. Michel, 1980. p. 292. [The Real War]
3. Lucien Poirier, *Stratégie théorique* III, p. 309. [Theoretical strategy]

confusion and the decisional paralysis that ensues, and, on the other hand, to cause him to engage his forces wrongly, in particular his reserves. Modern military vocabulary uses the word 'deception' to describe operations aimed at both misleading the enemy and confounding his expectations of the friendly manoeuvre on which he had based his own plans. One of the greatest Confederate generals, T.J. "Stonewall" Jackson – whose premature death was said to have caused the crucial defeat of the South at Gettysburg – expressed this in his strategic maxim: "Mystify, mislead and surprise!" [1] For Jean-François Phélizon [2], the aim of the stratagem is to "create chance" by thwarting the opponent's vision through the use of surprise. The art of the stratagem is an ancient art, in which the Chinese, amongst others, have always been experts. Chinese strategic thinking reserves a special place for the ruse – Sun Tzu, for example, proclaimed that: "All warfare is based on deception." [3] François Jullien states clearly that, in the Chinese way of thinking, the art of manipulation plays a central role. The enemy must be drawn to where one wants him to be, when one wants him to be there. He must want to do himself what we want him to do, and thus cause himself harm. In parallel, the art of defence is simply to ensure that the opponent "does not know what to attack" and the art of attack that "he does not know what to defend". Placed in such ignorance, the enemy will protect himself in many places, thereby weakening himself in each of them, with this exploitable weakness resulting from manipulation. Thus one must "lead the enemy to establish a disposition, without adopting one oneself, or at least not one that can be identified"; doing this renders him vulnerable. [4]

In *La pensée et la guerre* [Thinking and War], Jean Guitton offers an excellent analysis of this approach. He sees a ruse as "increasing the uncertainty of the enemy, while reducing that of the user. Such trickery means leading him to believe we are where we are not and that we have a plan that we do not, and doing so with such credibility that the opponent (whose forces are obviously limited) takes steps to counter a danger that weakens him elsewhere, in particular where he wishes to attack. Trickery is thus changing the enemy's calculation of the probable." [5]

1. Quoted by Phélizon in the introduction to *Trente-six stratagems,* p. 36. [Thirty-six stratagems]
2. On this subject of strategems, Jean-François Phélizon's remarkable preface to his *Trente-six stratagèmes* [Thirty-six stratagems] makes very interesting reading, Economica, 2000.
3. Sun Tzu, The Art of War, I, 18.
4. Jullien, p. 169.
5. J. Guitton, *La Pensée et la guerre,* Desclée de Brouwer, 1969, p. 156. [Thinking and War]

This was the approach adopted frequently by General Sherman during the American Civil War. Keen to maintain his freedom of action in the face of uncertainty, while increasing the uncertainty of the Confederate forces and dividing their efforts, he constantly sought, as he put it, to "place the enemy on the horns of a dilemma". This is reminiscent of Napoleon, who, as he was fond of saying, liked *to follow his idea in two ways*. This is illustrated well by Sherman's campaign in Georgia in 1864. His initial advance made it impossible for the Confederates to determine whether his objective was Macon or Augusta, then later Augusta or Savannah. All the while Sherman maintained the capacity to attack any one of these, depending on circumstances. Continuing his progress through the Carolinas, he adopted the same method: "Thus his opponents could not decide whether to cover Augusta or Charleston, and their forces became divided. Then he ignored both points and swept between them to gain Columbia. The Confederates were kept in uncertainty as to whether Sherman was aiming for Charlotte or Fayetteville. And when in turn he advanced from Fayetteville, they could not tell whether Raleigh or Goldsborough was his next objective." [1]

A year earlier, similar actions enabled General Grant to win the important battle of Vicksburg. By simultaneously threatening Jackson and Vicksburg, he made it impossible for the Confederates to unite all their forces against him when, moving swiftly to the east of Vicksburg, he cut off their main line of communication. The speed of this movement, coupled with his refusal to establish conventional supply lines, reinforced the effect of his attack, allowing him to change his plans rapidly to suit the opponent's response, to mislead the Confederates as to his intentions and to prevent them from attacking his rear. Establishing a pace of operation so fast that his enemy was unable to comprehend his manoeuvre and to withstand his attacks, Grant defeated the forces of General Jackson and General Pemberton in five successive engagements. After operations lasting less than six weeks, the 30,000 men in Vicksburg were forced to surrender, giving the Union undisputed control of the Mississippi and splitting the Confederate territory into two.

This example clearly shows that mobility – an element of flexibility – significantly increases the effect of surprise. Mobility expands the range of possibilities both for the actor, allowing him to extend his ability to adapt to circumstances, and for his opponent, who has to wait much longer for the final decision of the other side to become clear. It is also an essential component of the changes in tempo which are a significant factor for the opponent in any surprise, as he can be caught

1. Liddell Hart, Strategy, p. 134.

off-guard and at an inopportune moment. Exaggerating this somewhat, one could submit that the fortress is diametrically opposed to the mobile column: the Maginot Line represented the principle of certainty in the same way that Guderian's armoured spearhead represented that of uncertainty. Alas, we know what happens when these two collide.

Thus surprise, backed up by the ambiguity with which a commander can surround his actions, proves to be a fundamental factor of success, whether they be technological surprise for which the enemy has had no time to prepare [1], operational surprise, with new modes of action which are difficult to anticipate, or strategic surprise where changes in alliances can cause an imbalance at the very time the action takes place. For Napoleon, surprise – new, unpredictable and unexpected action – became a principle. Broadly speaking, his methods were generally the same but they always included a surprise effect. Moreover, "the means of presenting the surprise effect was always different. The enemy commander knew for certain that a surprise awaited him, but he did not know when it would come or what form it would take." [2] An enemy who is mystified, or in a position of uncertainty, is a weakened enemy: "Surprise is a fundamental element of French doctrine. To be able to act without being hindered by the enemy, he must be misled with regard to your potential, morale, position and intentions." [3] Charles de Gaulle's view was, that one should always "keep in one's possession some secret of surprise that may intervene at any time." [4]

Lowering the enemy's ability to reduce uncertainty and to react

The third way to increase the enemy's uncertainty is to lower his capacity to reduce it. This is, essentially, a question of destroying his ability to gather intelligence and to distribute information. Thus, deprived of his "eyes and ears", the enemy will be caught in a thick fog. It will be harder to implement his operational plans when confronted by a hostile manoeuvre he is unable to anticipate.

1. This is a well-known principle of the US forces; in every conflict they endeavour to use a new weapon, kept a close secret until that time, to which the enemy will at least initially have no reply.
2. David J. Rogers, *Les stratégies militaires appliquées aux Affaires*, p. 106. [Waging Business Warfare: Lessons from the Military Masters in Achieving Corporate Superiority]
3. Frédéric le Roy, *Stratégie militaire en Management stratégique des entreprises,* p. 81. [Military Strategy and Strategic Corporate Management]
4. Charles de Gaulle, *Le Fil de l'épée,* p. 181. [The Edge of the Sword]

This idea of blinding the enemy is as old as war itself, but has been significantly improved by developments in information technology and in accuracy. During Operation Iraqi Freedom, the Americans once again systematically employed this principle. By jamming transmissions, and destroying their radars and communications systems they plunged the Iraqis into the densest of fogs. The Iraqi High Command found itself unable either to anticipate the moves of the opponent – and so to use correctly its scarce armoured reserves – or to transmit tactical orders. Overwhelmed by the speed of the American action, the only possibility was a reactive manoeuvre, which became increasingly detached from the reality of the situation, leading rapidly to the collapse of the Iraqi defences. John Warden [1] – whose ideas formed the basis for the air strategies of the First Gulf War and also had a marked influence on air strategies and resources in the post Cold War period – stresses the importance of cutting off all possibility of information for enemy commanders. In his view, this is one of the key means of ensuring the collapse of the opponent's system.

In addition, just as it is important to thicken the fog surrounding the enemy, it is essential to reduce his ability to react to the unexpected or to take advantage of favourable opportunities. The first step is to deprive him of the tool intended for this purpose: his reserves. Of greater importance than the first echelon units, for which, initially, it will be enough to ensure that they are contained, one of the key objectives of a good commander will be the second echelon forces and, even more so, the enemy reserves. This is precisely what General Beaufre advises in his excellent *Introduction à la stratégie* [Introduction to Strategy]: "Before delivering the decisive blow, it is important to deprive the enemy of his reserves, either by misleading them into a false engagement, or through combat." [2]

1. John Warden, III, The Air Campaign – planning for combat.
2. André Beaufre, *Introduction à la stratégie,* p. 78. [Introduction to Strategy]

X. Conclusion

Throughout the history of war, neither the numerous organisational changes, the greatest technological advances, nor the "revolutions in military matters" – to use that well-known phrase – have really changed the fundamental problem confronting all operational decision-makers and their command systems: the problem of the uncertainty that derives from the complex, interactive nature of war. It is the very fact that it involves uncertainty – and man, an essential factor in many problems – which makes war more than a simple matter of managing resources in pursuit of a concrete objective. As one progresses from technical-tactical aspects to the politico-strategic, the increasing role of uncertainty alters the foundations of the act of war. It gradually loses its scientific character, becoming an art in which talent can be exercised.

Thus the operational commander has no option but to accept this inescapable phenomenon, and to learn how to decide, act and win despite, or better still, with the aid of, this constraint.

The initial reflex is to attempt to reduce the role of uncertainty, notably through knowledge; this is the prime purpose of intelligence and information management. However this approach, albeit essential, does not in itself suffice. History, both ancient and modern, offers many a cautionary tale to those who claim that the latest technological developments will enable them to dispel the fog of war. While it is indeed possible to render it less dense, or even to enable it to clear for brief moments, perfect visibility remains an illusion. For the foreseeable future, fog will continue to exist, so that it is better to adapt to it by adopting methods and means allowing one to act in spite of it.

This then opens up the second route for the decision-maker, who has a wide range of tools enabling him to follow it successfully. Rather than relying only on the incomplete virtues of planning, which, although necessary, soon reaches its limits given the chaos generated by the turmoil of the action and the difficulty of anticipating the intricate web of 'reactions/counter-reactions' that lies beyond the immediate future, the decision-maker will need to do everything in his power

to develop the adaptability of the organism whose destiny is in his hands in the middle of this uncertainty. If called upon to testify to the successes and failures of military actions, Darwin would certainly say that his principles apply fully to the vast, ever-changing, quasi-vertebrate organisms that are armies at war. The victors are those who, through continual adjustment, spontaneous variation, and creating and suppressing organs, adapt best in the hostile environment to the new and unpredictable circumstances in which they must survive and win. Develop ways of adapting to circumstances naturally: this is the rule which is valid from the tactical level to the politico-military level. There are many such ways, but in the end they converge in the choice of organisation and the command procedures. One thing is certain: freedom to adapt independently should be accorded to whoever perceives the need to do so first. The imperative nature of this principle is increasingly valid under present conditions, where the expansion of the battlespace and the faster pace of action lead to a decrease in the time available to complete the decision-making process of "orientation-perception-comprehension-decision-reaction". This necessitates a command style which history – "that judge without feeling, but not without fairness", as De Gaulle put it so well – has already shown to be of crucial importance; it is based on *decentralisation and subsidiarity,* as well as on a *trust* and *shared culture* which must be established well in advance of the action. *The role of the commander becomes clear: it is to define the common enterprise and to create the bubble of freedom of action within which the subordinate may exercise full autonomy*. Modern times have definitively killed off direct command and the execution of meticulous orders, often already obsolete by the time the action takes place. Instead, they call for the key expressions of *knowing how to command, coordination and freedom*, in other words of "indirect" command or command "through influence".

Thus the commander must first establish the means and rules on which his ability to act in uncertainty is founded and instil in his subordinates, well in advance of any action, the qualities indispensable to autonomous action. He can further improve his effectiveness by attempting, in contrast, to increase the uncertainty and its repercussions for his opponent. It is an inescapable fact that uncertainty and chance are found in every camp; one must protect oneself, but one may also seek to use them against the opponent.

Finally, at any time and no matter what technological assistance is available, *the key to effective command remains the ability to deal with the problem of uncertainty*. Moreover, this is the major conclusion of the latest, large-scale conventional confrontation involving the armed

forces. What historians will retain from the advance of US forces towards Baghdad in spring 2003 is that, "this war, like all those fought by the United States since the end of the Cold War, demonstrated dramatically the truism that competent militaries are those capable of adapting rapidly to the unexpected." [1]

In his first order, on taking on the post of Chief of Staff of the French Armed Forces [2], General Jean-Louis Georgelin was saying just this when he concluded: "Nothing will be possible if we do not maintain at a high level the spirit of adaptation which determines the effectiveness of the military instrument."

1. Williamson Murray and Robert Scales, The Iraq War, Harvard University Press, 2003, Cambridge and London, p. 248.
2. 3 October 2006

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Réalisé en P.A.O. par STDI - Z. A. Route de Couterne - 53110 LASSAY-LES-CHÂTEAUX
Imprimé en France. - JOUVE, 11, bd de Sébastopol, 75001 PARIS
N° 468079D. - Dépôt légal : Octobre 2008

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This book offers a universal approach of great interest to all who are involved in war, in whatever environment, and who are constantly confronted by the unexpected.

*
* *

Major General Vincent DESPORTES commands the Joint Defence College in Paris. Graduate of the US Army War College and former Military Attache in the United States, he has published numerous articles and various books focussing on tactical and strategic issues.

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